eLECTRiC WoRD

CONQUERING 1992

THE FUTURE OF MULTILINGUALISM

EC LANGTECH POLICIES

CORPORATE SOLUTIONS THAT WORK

SPECIAL BONUS: MULTILINGUAL WORDWORKER'S RESOURCE GUIDE

PLUS, OF COURSE, ALL THE NEWS, VIEWS, TIPS, AND REVIEWS

LT / electric word magazine # 13 may / june 1989 UK£ 2.75 DM 10 Ff 35 Dfl 12.50 US$5

SIEMENS

Speeding up translations for Europe 1992

Europe 1992. A home market of 320 million people with nine different official languages. Translations will be needed more than ever before, but conventional translation methods are already unable to cope with the huge volume of work. Translation times of a year or more for large technical documents can make a nonsense of product marketing schedules.

But Europe is setting the pace. A new computerized translation system increases the productivity of translators several times over. Siemens has developed METAL (Machine Evaluation and Translation of Natural Language), the first machine-translation system to use Artificial Intelligence techniques. In contrast to previous systems, it does not simply translate word for word, but deduces the meaning context. METAL is both intelligent and fast–200 pages a day. New challenges call for new solutions. For Siemens, 1992 can start tomorrow.

Siemens Computing
The European Solution

A19100-D-Z256-X-7600

Instead of an Edit: I am Salman Rushdie

Salman Rushdie is out of the public consciousness now, replaced by Alaskan oil spills, erupting volcanos, ritualistic mass murders, Japanese political scandals, and other soundbites from the news/entertainment industries. Too bad Salman Rushdie isn't out of danger.

In a world where disrespect for human rights is the rule rather than the exception, and draws only the feeblest, most genteel protest, one shouldn't be too surprised that a middle class writer could be sentenced to death by living fossils from the Middle Ages for merely putting words on paper, nor that the response of the politicians, government and media leaders should be so feeble, short-lived and ineffectual. Indeed, given the fact that widespread, state-sponsored torture, murder and genocide draw nothing but yawns, the only surprise may be that Rushdie was ever in the headlines in the first place.

Apologists for banning Rushdie's book claim that the issue is really one of religious tolerance: can Mohammed be blasphemed, Islam insulted, and, by extension, all Moslems outraged with impunity? Obviously, the answer is an unequivocal yes – and so can Moses, Christ, Mao, Thatcher, Gorbachov, Mick Jagger and Mickey Mouse.

The overriding principle isn't freedom of religion, it's freedom of expression, of which freedom of religion is a subset. Do people have the inalienable right to write, print and believe what they want, or don't they? However untruthful, however upsetting to someone's cherished beliefs, however immoral, however damaging to state security, however discomforting to popular opinion, however outrageous. Kids have always had it right: sticks and stones may break my bones, but words will never hurt me.

As British novelist Ian McEwan put it, people are outraged daily by what they read in the paper and see on television. Does that give them the license to pick up a gun and rub out their tormentor? The proper response to ideas which outrage is not resort to brute force but counterattack in the realm of ideas – with other ideas. It's no coincidence that the ayatollahs of the world can respond only like thugs, with threats and bullets, precisely because they don't have any ideas.

And now that I've gotten that off my chest, there's still the nagging reality that a wordworker whose name and face we now all know is sentenced to die for something he wrote, and there's a faceless army of willing fanatics ready to carry out the sentence. Last year it was big time director Martin Scorsese who was feeling the fundamentalists' heat. This year a relatively obscure British writer. And next year, any inoffensive wordworker with an uncomfortable opinion? Crazy? Try asking Iran's inoffensive Bahais. Too bad *tens of thousands of them have been murdered by the ayatollahs. Ask not for whom the bell tolls . . .*

As the button that's circulating in New York says: I am Salman Rushdie.

On the brighter side, this is LT's 2nd anniversary issue. The future's so bright we still gotta wear shades. LT 1 had 36 pages, while this, our biggest issue ever, has 76 pages. As contrasted with LT 1, which was written mostly by yours truly, our international network of correspondents expands by six this issue, as we welcome on board Paul Fisher and Richard Sarsen in the UK, Ralf Kohlrausch in Germany, Ezra Shapiro and Steve Rosenthal in the US, and Marie Claire Dassen in the Netherlands. Now that we've applied for a 2nd class permit, our US mail problems should be easing. Never content with the status quo, we try a different perspective this issue – by looking at the demand side for a change: how people are actually using (or not using) all this technology we write about. And we give ourselves a minor name change, adding Electric Word to our title (because it says very succinctly what we're all about). Finally, we have a birthday present for you – our detachable Multilingual Wordworker Resource Guide, inserted in the center section of the magazine.

– Louis Rossetto

ELECTRIC WORD 3

News You Can Use, LinguaFranca for multilingual wordworkers, Views and Abuse from readers, and this issue's Stars: the man responsible for all those cheap European PCs, Alan Sugar, Dan Winkler creator of the language behind Apple's Hypercard, and an obit for the most revolutionary wordprocessor around, the Canon Cat.

SPECIAL SECTION: CONQUERING 1992

INDEPTH LOOK AT EUROPE'S MULTILINGUAL CHALLENGE (Or, if life had been meant to be easy, we'd all be speaking Earthlish) 20

Twelve countries, nine different languages, 72 language pairs. However you do the arithmetic, the single European market adds up to a problem of staggering proportions. Consider: 100,000,000 pages were translated in 1988. No wonder the EC is looking for technological solutions.

EC: IS THERE A POLICY IN THE HOUSE? 26

Now that they've reached agreement on cutting back the CAP's agricultural subsidies, they've got to find something to do with all those ECUs they're not going to be spending on butter mountains.

COPING: EIGHT CASE HISTORIES FROM THE DEMAND SIDE 43

You don't have to wait until 1992 to find out how companies are dealing with the translation and paperwork burden of multilingualism in the EC. Here are eight examples, drawn from power users in software (Ashton Tate), insurance (UAP), manufacturing (SKF), multinational manufacturing (Canon), law (Skadden Arps), media (Hachette), hardware (ICL), and telecommunications (Philips).

MULTILINGUAL RESOURCE GUIDE .... **CENTER SECTION**

Our special insert on handling multilingualism today, from wordprocessors to machine translators.

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Product Reviews You Can Use, Book Reviews You Can Use, 15 Ways to Use WordStar, CyberLex and the Calendar, the Classifieds.

WORDWORKER: MICHEL GINGUAY 76

Michel Ginguay is the doyen of French-English electronic data processing lexicographers.

The Technology of Language Technology: This issue was written on clones using WordPerfect 5.0 wordprocessing, and on Mac +'s, SEs and IIs, using Word, WriteNow and Fullwrite Professional. Text was ported to the Mac using MacLink Plus. LT was laid-out on Mac IIs with Apple color and Radius A4 screens, using PageMaker 3.0. Designs created with Illustrator and Freehand. Scans were done on an Agfa S200 with MacScan software, proofs on an Apple Laserwriter II NTX. Text was output on a Linotronic 100. Headline fonts LT Wide, LT Font designed by Max Kisman and produced by Bert Hendriks on Fontographer. Linotron: Niek van Dijk, Amsterdam. Printing: Den Ouden, Amsterdam.

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LANGUAGE TECHNOLOGY

ELECTRIC WORD

GRAMCHECK REVOLUTION MARCHES ON

Two linguistic software developers, Houghton Mifflin and Microlytics, proudly announce new OEM deals for their grammar checkers.

Microlytics' gramchecker for the Mac, co-developed with lingware developer Emerson & Stern, is to be ported to MS DOS, OS/2, and Unix computers, and incorporated into software from Ashton-Tate, Claris, Lotus, Microsoft, and Symantec.

Meanwhile, Houghton Mifflin has been doing barn-burning OEM business, following the integration, last year, of its CorrecText Grammar Correction System (GCS) into Lifetree's Volkswriter 4 (see review, page 59).

The Boston-based company has licensed Lifetree to market CGS as an add-on MS DOS product, under the name Correct Grammar, for a two-year period. The first fruits of the deal have been versions to run with WordPerfect 4.2 and 5.0. Versions compatible with other major wp programs are planned soon.

CorrectText is based on a database of over 135,000 head-word-entries. Each word is accompanied by such linguistic information as its syntactic functions, inflections, spelling, and hyphenation.

Advanced compression techniques allow large quantities of information to be stored, while algorithm optimization

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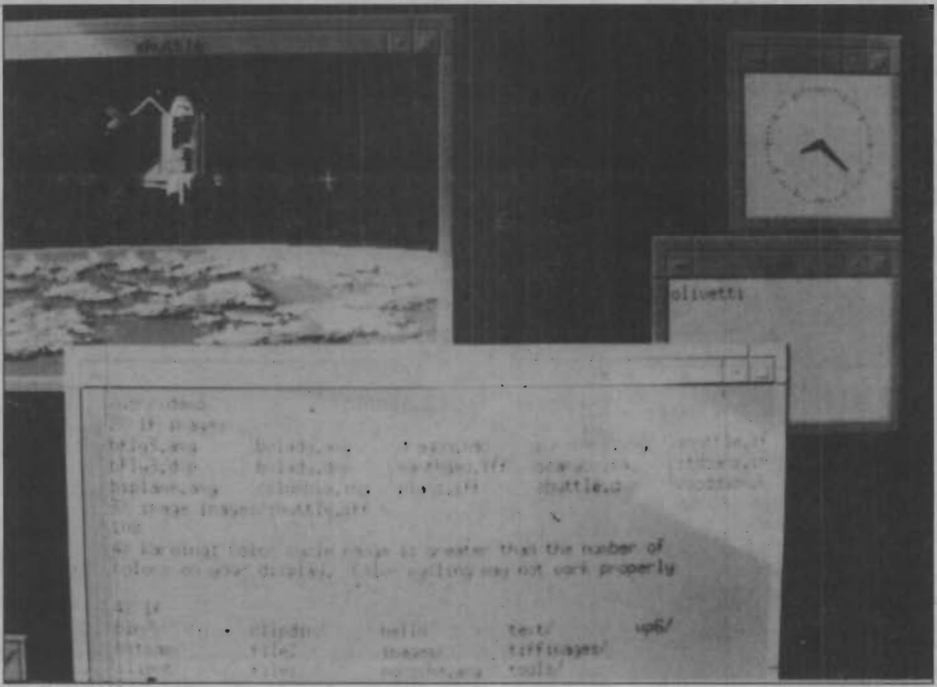
UNIX RISING



The UNIX operating system, firmly entrenched in academic and scientific circles for years, is now poised to make its mark in the much bigger PC arena.

With the once dominant DOS operating system unable to keep up with recent hard- and software developments, users are looking elsewhere. Microsoft would like them to look at OS/2. But its difficult birth is allowing a window of opportunity for other systems, like the Mac and Unix.

Until recently, UNIX was a peripheral segment of the market because of the lack of a clearly standard version, because PC's have only recently become powerful enough platforms for running resource-hungry UNIX, and because the interface was even more opaque than DOS's.

Santa Cruz Operation may change all that with its announcement of Open Desktop, the first integrated package for 80386-based PC's.

Open Desktop consists of full 32-bit, multiuser, multitasking UNIX, the X-Window system, SQL database management, TCP/IP networking to other systems, as well as full support for thousands of existing DOS and UNIX applications. The graphical interface is OSF/Motif (from Microsoft, which has a stake in SCO). SCO calls it "Presentation Manager compatible."

Mass-market UNIX came a step closer to reality with Tandy's announcement that it will be bundling Open Desktop on its 386-based 4000 series and 5000 MC computers.

Ship date is September. Prices start at US$995 for a single-user version. Two add-ons are in the works, both for around US$1500. The multi-user upgrade will include server versions of the database, and NSF and X-Window services. Another add-on will include Microsoft's CodeView debugger, development tools for Unix, and cross-development tools for DOS and OS/2.

SCO, Box 1900, Santa Cruz, CA 95061, USA. Tel: +1 (408) 425 7222

DESKTOP DIP

With more and more of the world's paper-based info being digitized, it was just a matter of time before the once lowly PC would be reborn as a document image processing (DIP) station.

Most DIP systems are implemented via fast local area networks on a departmental level within medium-to-large organizations. DIP's downward migration to PC's now means that the all-important standard facilities of the huge installed base of PC's will remain available alongside and/or within such systems.

The heart of the DIP-X DIP system is the Xionics Image Processor (XIP) add-on card, which can be stuck in any PC with a free slot. The XIP card comes bundled with a variety of image processing software.

(continued on next page)

SGML FOR MAC

Having been adopted by some of the world's megapaper churners – not least of all the EC and the US Defence Department – Standard Generalized Markup Language (SGML) is on the brink of becoming an important standard, not least thanks to its portability among a wide range of hardware platforms.

SoftQuad Author/Editor for the Mac is the first mass distribution software package to satisfy SGML standards. The Mac version takes full advantage of typefaces and point sizes onscreen, but the disk file simply contains ASCII text tags that are completely machine-independent.

A user specifies the parts of a document – headings, subheads, tables, etc. – and an SGML-compatible program inserts one of 200 or more standard tags into the text.

The SoftQuad editor combines the tag-generating and rule-checking expected of an SGML package with a full-feature quasi-WYSIWYG wp program. Stylesheets, integral outlining, search-and-replace of structural elements, and "entity references" all ease the production and maintenance of those very hefty documents so loved by bureaucrats.

SoftQuad Rules Builder is a companion product. It allows users reasonably proficient in SGML to compile a Rules File to be used with the Author/Editor. A rules file is a subset of SGML document elements which has been checked for consistency and conformity, and compiled in a form that makes it easily accessible to the Author/Editor.

Unixsys (UK), Genesis Centre Science Park, South Birchwood, Warrington, Ches. WA3 7BH, UK. Tel. +44 (925) 828 181

LEARN PAGEMAKER WHILE JOGGING

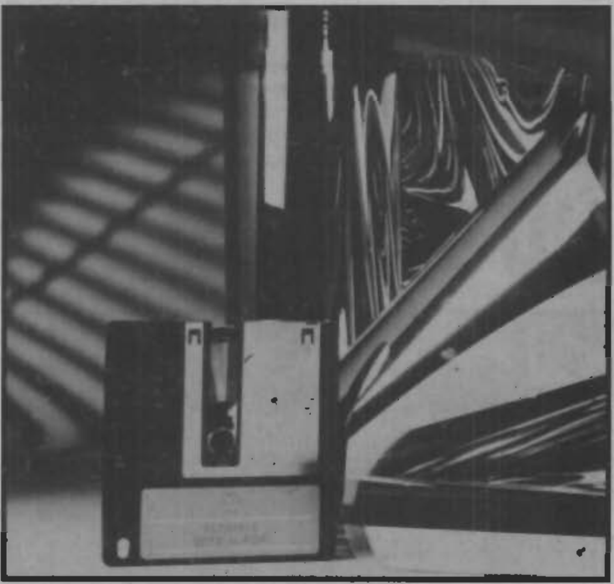
As if HyperCard Help stacks that whistle, flash, and make dubious noises aren't enough, you can now learn your favorite Mac software by Walkman.

Personal Training Systems is offering a series of tutorials for Excel, Word, Works, PageMaker, Persuasion, Illustrator 88, and HyperCard. Each package includes a 90-minute audio cassette tape and a set of examples on diskette.

We perceive here yet another career opportunity for Jane Fonda, when the day finally comes that her spandex begins to sag. "Cell up! Cell Left! Work those macros..."

Personal Training Systems, P.O. Box 54240, San Jose, CA 95154, USA. Tel: +1 (408) 559 8635

DIGITAL PAPER



ICI Digital Paper is a completely new form of optical data storage. It consists of a polyester-based substratum, coated with an optical recording material made of polymer dye. The result: a highly flexible, robust, and low-cost mass storage medium.

The new material can be cut into lengths as tape, stamped into disks, inserted into cassettes, or cut into strips or tags. A laser is used to write the data, which is permanently recorded.

ICI says the archive life of its Digital Paper is currently 15 years. The UK chemical giant expects this to be extended to 20 years in the near future.

Some staggering storage capacities are possible: a 2,400-foot reel of half-inch tape has a storage capacity of 600 gigabytes – that's 600,000 megabytes – at a cost of around a half a cent per megabyte.

Bernoulli Optical Systems (Boulder, CO) is now developing two drives for the new media: one disk, one tape.

ICI Imagedata, PO Box 6, Shire Park, Bessemer Road, Welwyn Garden City, Herts. AL7 1HD, UK. Tel: +44 (707) 323 400

DVI

IBM JOINS INTEL

Intel and IBM are to collaborate on promoting CD-ROM products that make use of Digital Video Interactive (DVI), the data compression chip technology from Intel.

At the Microsoft-sponsored Fourth Annual Conference on CD-ROM, the two U.S. companies announced plans to develop a site in Princeton (NJ) to develop sound and video techniques for CD-ROM.

With IBM as a partner, Intel has a good chance of adding some momentum to DVI development. The companies aim to have a board ready before 1991.

The board should allow CD-ROM players to play high quality audio and full motion video. Since all information (text, graphics, sound, video) will be digital, they will allow the design of interactive applications.

Intel is already selling an applications development unit, called the Pro 750, for US$21,500. It's a 386-based AT, with seven DVI-related boards. In addition, Intel has decided to go for the Philips/Sony strategy to establish an open platform for a new technology. The company wants to ensure that it will have "broad industry contributions and acceptance."

Philips and Sony have been doing the same for their CD-I (CD-Interactive) and CD-XA (CD-Extended Architecture) technology – the only rivals for DVI with a lot of development hurdles of their own.

CIA NOW ON CD-ROM

Called the World Almanac of the Federal Government, the CIA World Fact Book is an annual publication of the Central Intelligence Agency, of which a CD-ROM version is now published by Quantas Press.

While the title may imply that the notoriously secretive CIA is actually divulging secrets, fear not: national security is not at stake. Information in the Fact Book was compiled from public domain sources and contains neither classified information nor "Intelligence Community estimates."

What it does contain is extensive examinations of territories and countries around the world, with socio-economic, geo-political, demographic and other data contributed by various agencies of the US government.

TextWare Software generated the index for the CD-ROM, and is supplied as the retrieval software. Quanta scanned single country maps at 300 dpi in TIFF format for inclusion on the CD-ROM.

Available in High Sierra format, the CIA World Fact Book costs US$99.

Quanta Press, 2239 Carter Ave., St. Paul MN 55108, USA. Tel. +1 (612) 641-0714.

POSTSCRIPT CRACKED

Two companies have recently deciphered the encryption code that Adobe uses with its PostScript fonts.

Bitstream (Cambridge, MA) and Raster Image Processing Systems, or RIPS (San Francisco, CA), have both discovered the algorithms that protect Adobe's huge font library by means of specially encoded font files and a proprietary printer controller. Adobe currently licenses the latter to printer manufacturers for a small fortune.

While it won't immediately mean cheap PostScript laserprinters, it does mean that true PostScript printers will no longer be necessary for printing PostScript fonts, either Adobe's or those of any other vendor.

Bitstream, already a major font supplier, is furiously looking to cash in on its find. It's planning to release a library of more than 1,000 fonts during the second quarter of 1989, competitively priced at US$50 per font.

RIPS went a step further, deciphering not only the specific character description code, but the "hints" that enable lower resolution devices like the Apple LaserWriter to achieve better results when scaling fonts sizes. They'll be marketing their own high-speed, RISC-based printer controllers for both the PC and the Mac II.

Adobe has so far kept mum about these developments, no doubt letting their legal lions size up the prey. Nonetheless, the cloning of PostScript has always been seen as essential to its acceptance as a true industry standard – which it would seem churlish of Adobe to bemoan.

HUMOR PROCESSOR

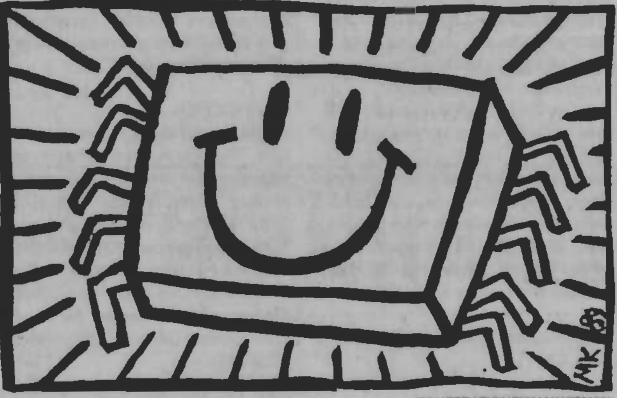


ILLUSTRATION BY MAX KISMAN

While some of us remain veritable Julia Childs in the ribaldry department, armed solely with a sharp tongue and a dash of imagination behind the chopping block, techno-"pun"dits now have their own wit-utensil: the Humor Processor (US$49.95), from Berkeley, California-based Response Software.

Thousands of phrases, ranging from names to situations, are stored in its 20 databases. You link any two databases in two windows onscreen and then link phrases randomly as you scroll through the windows.

When you've come up with a side-splitter, the Humor Processor's editing functions will let you put the final embellishments on your drollery.

Before bestowing an unconditional recommendation, LT's editorial staff is awaiting written confirmation that the program is not offensive to small children, minorities, or household pets.

Info: Tel: +1 (415) 843-1034.

SHELL, UTILITY AND MENU SYSTEM IN ONE

Traveling Software (Bothell, WA) categorizes ViewLink, its new PC software package, as "accessibility software."

It enables you to link and group your files any way you want, without being forced to go through all the DOS steps. Wordprocessing documents, spreadsheet files, graphics files and more can be linked together. It's even possible to cut and paste elements of each one into the others.

How does it work? The software automatically identifies the applications and files present on a PC or LAN during installation, and initially presents them as a logical set of "views," each one associated with any number of "items." ViewLink is aware of the contents of files, and can group them accordingly: by date, by type or arbitrarily.

ViewLink runs on PC/compatibles and costs US$150.

Traveling Software Inc., 18702 North Creek Parkway, Bothell, WA 98011, USA. Tel: +1 (206) 483 8088

LET'S TALK ABOUT THIS

FUJITSU SPEECH REC

Fujitsu, Japan's largest computer manufacturer, is shipping a voice recognition unit with a vocabulary of up to 4,000 words in any language. The megacompany has been developing the box for 13 years.

Fujitsu claims its Voice Communication Unit (VCU) can handle multiple users (different voices) via an ordinary microphone. It can recognize single isolated – or up to 12 connected – words in utterances of up to three seconds in length, and make replies up to 5,000 seconds long.

It also recognizes commands to operate software, thereby freeing the eyes and hands of users for other activities. This makes it highly suitable for lab work and disabled users. A standard GP-IP interface allows it to be connected to minis, workstations, or PC's. And it's pint-sized: just 23 x 13 x 42 cm.

The VCU made its self-proclaimed "world première" at Hannover's Cebit computer show in March. In a brief test for LT editors, it could handle such very similar German words as "drei" (three) and "frei" (free), or "acht" (eight) and "ab" (off) – at least when these were uttered as isolated words.

The VCU is already for sale in Japan and the US. Europeans will have to wait till the end of the year. Price: around US$6,000.

Fujitsu Ltd., 6-1 Marunouchi, 1-chome, Chiyoda-ku, Tokyo 100, Japan. Tel: +81 (3) 216 3211

TAKE A NOTE, MAC

If you teach the Voice Navigator a basic vocabulary of commands, you'll be able to operate your Mac just by speaking to it. The Voice Navigator, introduced at the most recent MacWorld Expo in San Francisco, is a hardware/software combination consisting of an analog-to-digital converter and voice recognition software. The external unit has a built-in microphone and speaker, as well as jacks for external devices. The software loads as a Desk Accessory or INIT, and is thus available from within any application. The Voice Navigator has potential for the handicapped and disabled, as well as those Mac users who feel that using the mouse is too complicated. Price: US$999.

Articulate Systems, 99 Erie St., Cambridge, MA 02139, USA. Tel: +1 (617) 876 5236

EURO DTP

While some computer-based technologies are moving *downmarket* in availability, DTP is actually doing the reverse. Witness Graphotexte. Developed by a French-American consortium and marketed by British-based Profile Computer Services, Graphotexte is the first European designed DTP system for the high-volume corporate user. It runs on Digital, Sun, and Apollo workstations, once practically the exclusive domain of now antiquated TeX. It's a modular system, comprising a text editor, graphics editor, a table editor, document editor, and an optional photo editor for the manipulation of scanned images. It accepts ASCII files generated by UNIX, VMS, or MS DOS systems.

Profile Computer Research, 11 Hills Place, London W1R 1AG, UK. Tel: +44 (1) 734 9681

LINGUAFRANCA FOCUSES ON WORDWORKING IN MORE THAN ONE LANGUAGE.

$5000 CHINESE MT

PHOTO BY LOUIS ROSSETTO

Among all the larger-than-life shimmer and gloss of Hannover's Cebit show, one minimalist booth: cardboard boxes and plastic bags strewn among assorted bargain basement furniture, and a lot of homesick-looking Chinese sitting behind their "Greatwall 386" computers.

They were demonstrating Transtar, an English-Chinese machine translation package developed by the privately owned China Software Technique Corp.

Transtar, billed as "the world's first commercialized English-Chinese MT system," was first released in September 1988 "following ten years of research." It costs US$5000, runs on a 386, and its translations are "OK," according to a sinologist onlooker in Hannover.

LT / Electric Word was allowed the briefest of test spins around Transtar. We took a random English sentence from LT#12: "BMW puts out three basic types of documentation: sales literature, parts lists and maintenance manuals, and the owner's manual."

Programmer Zhao Xiaohang keyed the sentence in, and Transtar went into action.

The package's interface looks so simple, it's hard to believe it isn't a PC utility that you might get free of charge with a computer magazine subscription.

After a menu or two, Zhao Xiaohang assigned the sentence a file name, chose "computer science" from one of what he claimed was the package's nine 20,000-word specialized glossaries, and hit return. No pre-editing took place.

The package first looked up all the words in its 40,000-word general dictionary, then in the specialized glossary, and beeped. It had run into an unknown word: "BMW." (So what do post-Mao yuppies drive?) Zhao Xiaohang opted for "leave" in the "change-or-leave menu," and one minute later, the Chinese translation was displayed.

According to an editor of the German periodical *Chinesisch und Computer*, who was present at the test, the translation was not bad. Just two mistranslations: Transtar couldn't find the phrasal verb "to put out" among its 7,000 idioms, and so used "to put" instead; and it translated "documentation" as "documents." Zhao Xiaohang postedited the Chinese sentence and smiled at the result.

Written in Cobol and C, Transtar consists of an analysis component of 4,000 rules, and a generation component of 2,000 rules. Analysis im-

(continued on next page)

CYRILLIC

JUST A KEYSTROKE AWAY

Two German companies are marketing a hardware/software product to let your wordprocessing or spreadsheet application generate Cyrillic at the stroke of three keys - Ctrl-Alt-F4, to be exact.

The script-switcher, called BC-Muli-K, was developed by Uwe Blusch of Blusch Computersysteme (Essen, FRG). It consists of a card and some software on a floppy disk. These come with a special keyboard from peripherals manufacturer Marquardt.

Each of the keys has a Roman character (in black) and a corresponding Cyrillic one (in revolutionary red) emblazoned on it. So switching scripts doesn't mean you have to switch keyboards too.

Blusch and Marquardt will be selling version 2 of the system in the West as well as in the East. According to Marquardt, the new version works with Open Access, Word, Multiplan and dBase, and is compatible with PS/2 systems.

Blusch Computersysteme, Witteringstraße 56-58, 4300 Essen, FRG. Tel: +49 (201) 772 070

LEXPERTISE

MACPROOF TO LE RESCUE

"Over half of all the English text written in Europe is by non-native-speakers." That's the message from Brett Newbold, CEO of Lexpertise SA.

The Swiss-based lingware firm has taken up the cudgels for those many foreign users who regularly need to write English. To ease their burden, the firm is now shipping versions of its proofreading and grammar checking software tailor-made to non-native-writer needs.

European MacProof and Bilingual PC Proof are each served up in two versions: one for French and one for German speakers. European MacProof is for the Mac. It's installed as a desk accessory, enabling it to be used within most Mac wp programs. Bilingual PC Proof is its DOS-based counterpart. Owing to DOS memory restrictions, it only functions as a standalone – that is, non-memory-resident – package.

Both packages help correct the typical mistakes that French or German speakers make when writing English: *faux amis* such as "eventually" for *éventuellement* ("possibly"), singular/plural foul-ups such as "informations" for *Auskünfte*, and those ubiquitous irregular verb mix-ups.

Launching the two products at Amsterdam's European MacWorld Show in April, Newbold observed: "Up till now, wordprocessing software has been primarily concerned with what a text looks like – and we've pretty much reached the limits of making a text look pretty. Now we're entering the era of wordprocessing software that concerns itself with the *content* of text."

Lexpertise has also announced a marketing agreement with major Mac software supplier Claris (Mountain View, CA), whereby Lexpertise lingware will be sold at a discount to buyers of localized versions of Claris's new MacWrite II.

Many readers will be relieved to learn that the Swiss-based firm is not leaving anglophones out in the lurch, ei-

(continued on next page)

SEARCH ME!

Dictionarian is a smarter-than-average software engine specifically tailored for fast search-and-retrieval from multilingual dictionaries.

It is sold with four English-French dictionaries, containing more than 15,000 general terms, 1,300 business terms, 600 computer terms, and 300 "popular slang" terms.

Fuzzy searches are an important feature, allowing partial or misspelled words to be retrieved. String searches are also possible, that is, searches on entries that include a given string of characters.

The retrieval software is loaded as either standalone or memory resident, the latter enabling access from within practically all commercial wp packages, and allowing cut-and-paste operations to other programs.

Sold under the name LeDico in France, and Dictionarian in the US. Price: US$98.

Dictionarian Systems, 57 rue St. Blaise, 75020 Paris, France. Tel: +33 (1) 43 70 84 03

SAY IT ANYWAY YOU WANT

Wintext is a versatile new wordprocessor for the Mac with some hefty multilingual muscle. On Macs equipped with Apple's optional system software, Script Manager, a wide range of character sets can be generated: all West European, Greek, Arabic, Hebrew, Chinese, Japanese, and Korean. All these, including those requiring reverse and top-to-bottom cursor progression, can be written in the same document. In addition, automatic algorithmic hyphenation is available for 14 European languages. And a stylesheet function is included, as well as search and replace on text attributes, still a rare feature in Mac wps. Mathematical formulae, in some ways a language unto themselves, can also be created by means of a special formula editor.

Winsoft SA, 34 bd de l'Esplanade, 38000 Grenoble, France. Tel: +33 76 87 56 01

FUJITSU MT

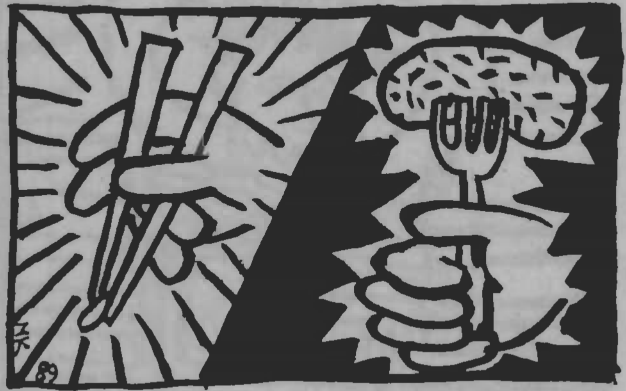


ILLUSTRATION BY MAX KISMAN

"The image data is edited the personal computer and has been printed." This piece of fractured English is a translation of a short Japanese news story – and ample evidence of Atlas's less-than-perfect command of the English language.

Atlas is a machine translation system developed by Japan's biggest computer maker Fujitsu. And despite apparent mild bouts of aphasia, it will be presented at Munich's MT summit in August this year – with an additional language pair: Japanese and German.

According to the company's Brigitte Obster, who demonstrated the system at Hannover's Cebit computer extravaganza in March, Atlas is still "not quite ready" and won't be before next year. Fujitsu has now been developing Atlas for some ten years.

Fujitsu showed the system on a Unix workstation with X-Windows while online to Nikkei Telecom's news service. News stories were downloaded and translated.

Unfortunately, the brave performance left much to be desired. The system crunched out a lot of funny English and was greeted with guffaws from onlookers, especially those working in the natural language processing field. Among them was Houghton Mifflin's Mary Ellen Hoke, who commented: "Atlas is one of the oldest and one of the worst machine translators ever. The system is rigid."

Of course, good translation is probably not the point. The fact that Atlas was translating financial news is a good indication of its real purpose – providing enough insight into the source text to extract sufficient information to make decisions – even *those* decisions also include getting a good translation.

Atlas's eventual aim is to take long technical and scientific texts in Japanese script – Kanji, Katakana, and Hiragana – and translate them into English as well as vice versa. Layout settings will be kept intact in the translation.

Once on the market, Atlas software will cost around US$ 45,000. "And," Obster added, "the software will probably be available for the PC soon."

Fujitsu Deutschland GmbH, Rosenheimer Str. 145, 8000 München 80, FRG. Tel: +(49) 89 4130 10

MONDOGLOSSO

A group of leading French linguists and lexicographers have signed an article published in **Le Monde**, France's leading daily, calling for modifications in French spelling. They cite certain accented vowels as problematic both for native learners and for computer coding applications . . . Meanwhile, poor old **francophonie** has incurred two blows where it hurts . . . First off, in his new book on the future of Europe, **La Grande Illusion**, respected French business brain and writer Alain Minc suggests that Europe adopt English as its lingua franca, thus releasing money and intelligence to teach people to use the English (!) language properly . . . Second, along comes the **Institut Pasteur**, France's prestigious medical research institute, with the shocking news that from now on it'll be publishing its annals solely in English . . . Some Québécois scientists hit the roof, as did a lot of **West African** education ministers who've been keeping the faith in francophonie's farther-flung outposts . . . The Institut probably added fat to the fire by issuing a **"clarification"**: articles would still be published in French, but only if they were scientifically of the highest order. At least all the crap will be in English only . . . **Textpert**, the Mac-based OCR package from CTA (Barcelona, Spain) now supports six languages: English, French, Italian, Swedish, German, and Spanish. And a PC version of Textpert will be out before summer. Price: about US$1500 . . . American university **Dartmouth College** (Hanover, USA) has developed a Chinese-learning package for the Mac that allows the student to both hear Chinese characters and see how they're drawn . . . And the People's Republic's **H-Y Technology Co.** has also written a Mac-based Chinese language learning package. No details yet . . . Canon has introduced a Japanese-language DTP system called **Canon Word Processor 1000**. The system comes with a 40 Mb harddisk and can be fully networked. Prices are US$20,000 for the basic system, US$2,900 for the LAN interface, and US$3,900 for the harddisk . . . MoonStar is a fully-featured wordprocessing and DTP package developed by **MoonStar Computer Consultancy and Software** (Istanbul, Turkey). It offers users not only true WYSIWYG, but fast switching between text and graphics. Other features include stylesheets, support for multiple fonts, greyscale printing, and a mouse-based, graphic interface . . . **Lexitech**, one of the biggest translation/documentation companies in the world, is shipping its own version of LinguaTech's MTX terminology management program. Dubbed **Lexiterm**, the new package will eventually support online glossaries developed by Lexitech itself . . . West Germany's Siemens has also climbed on the termware bandwagon with **Term-PC**, running on MS DOS and Sinix machines. The electronics giant is offering parts of its own treasured central termbank "Team" to Term-PC buyers . . . ***Mit freundlichem Gruß aus Berlin***, lingware developer Franz J. Wilski is marketing his own translation tool, confusingly called Speller-Spellchecker. The product bears an uncanny resemblance to INK's Translator Editor – screen split three ways, etc. – but comes with English-German and Spanish-German glossaries. Price: DM598 (US$315) . . . Brussels-based Gecosys has installed **DealReader** in the foreign exchange department of the United Bank of Switzerland in New York. VAX 785-based DealReader extracts meaning from the text of spot-dealing transactions and converts it into machine-readable format . . . **International Quartz** (Hongkong) has launched an "intelligent" Chinese-and-English electronic typewriter. That's all we know. But if you're reading this, Quartz, please send further details here to the Newsdesk, LT / Electric Word.

CCITT MUST GO

Dear Editor:

Once again, the Big Money triumphs in Europe and the poor, stupid consumer gets shafted. Ariane can launch TV satellites for the commercial stations, Diane – the European telecoms network – gets scrapped. In its place we have the national networks.

My own experience is with West Germany (the unspeakable Bundespost) and the UK (the abysmal Telecom Sludge). In the past month I have heard from a colleague who has been told categorically by Bundespost telecoms "experts" and a private-sector telecoms "consultant" that he cannot send non-English characters via Datex-P "because it's a 7-bit network". I have also been *given the Great Good News by* Telecom Gold that it is releasing its file transfer protocol (previously reserved for corporate customers) for use by normal customers. The miracle ingredient is an ancient kermit – no sliding windows, no error checking worth speaking of, no interruptible transfers. With this clunker, I can communicate with the CCITT world – or the few individuals in it who share this marvel. (When I enquired about links with the People's Republic of China, I was told that the experience acquired by the Telecom country manager is not available to me as a mere subscriber.)

Leafing through my US magazines, I stare gloomily at ads for 2400/1200/600/300 bps modems supporting Hayes, CCITT V24 and V24 bis for $150 while I use my officially-licensed West German modem costing seven times as much at a sluggish 1200 bps on a system plagued by line hits.

Cranking up this gold-plated monopolist's delight, I can dial into the West German mailbox system. My local sales representative in a major city said I was his first enquiry – unfortunately, he was sick the day they held the training course, so he couldn't help me. I can also access the wonderful world of Telecom — although I have to do this through an official Datex-P number, because UK PSS apparently transmit a frequency which my West German modem chokes on.

Fortunately, my hideously overpriced device can reach the USA — MCI, The Source and Compuserve included. Here, I can talk to over half a million programmers, customer support networks, fellow translators and interpreters, and enthusiasts and professionals in dozens of areas. I can also communicate with my West German customers 15 kilometers away quickly, cheaply and effectively, using powerful and effective protocols for my electronic mail - and I can do this from anywhere in the world I'm likely to go. Certainly, there is fax – but compared with wp formatted text files, fax is the electronic equivalent of a runner carrying a note in a cleft stick.

There is no sign of an institution which would promote a European Single Market in telecoms. We are being miserably served by our national PTTs and the CCITT, and abominably exploited for the paltry services being offered. It is time language mediators and their clients started a campaign for a decent European service with world links – and to hell with the vested interests and benighted bureaucracies.

Paul Danaher
Oberursel, West Germany
Compuserve [73260,2310]

N E W S P E A K

"Technology has changed the rules. For the first time, it's possible to 'office' with total time and space independence – something unimaginable even a decade or two ago. Managers in the late 1870s had only begun to experiment with Bell's electric toy, as the telephone was then known, and could not have conceived of the facsimile machines, videoconferencing, and corporate jets taken for granted by today's harried executives. Today, we stand on the threshold of the age of the virtual office — an office that exists only when and where it's needed."

Duncan B. Sutherland, Jr., *chairman of Arlington, Virginia-based The Sutherland Group, and former founder of the Wang Laboratories's Advanced Systems Laboratory.*

"We're monitoring three separate projects where they are creating all electronic printing presses. Where you go direct from electronic signals to four color output at printing press speeds, printing 10,000 four-color process 11" x 17" pages an hour. It means that you'll sit in your office on an IBM PS2 or Macintosh and you'll do all your layouts, and down at the quick print shop will be this big thing where signals go in from a modem and out the back comes four-color brochures. Initially there's a setup time involved in getting the images loaded into the press. Evenntually, you'll be able to run that 10,000 copies-an-hour press and change your images every 100 copies or so. So you talk about microdemographics in terms of direct marketing. I have a sense of, 'Gee, sir, as a senior public relations person who owns a Nixxan 300 ZX we think you're probably going to be interested in our public relations sports car rally tachometer' Or whatever."

David Henry Goodstein, *president of the Boston-based InterConsult, consultants on electronic publishing to Fortune 500 companies in the US, Japan and Europe.*

"The price of leadership is eternal paranoia."

Andy Grove, *CEO Intel, makers of the most widely used processing chips in computing.*

"Incorporating sound bites in documents may seem a superficial addition to the basic word processing function. But it is in line with the tendency towards object-oriented programs and user interfaces, hypertexts and multi-media documents. And all these powerful trends in the technology will encourage us to think of wordprocessing as much broader than the typing or typesetting functions predominant in today's wordprocessing and desktop publishing programs. While wordprocessing will encompass voice and graphics, we can also count on an equally strong tendency towards a more abstract and artificial view of the document as 'structured program.'"

Adam Hodgkin, *writing in* Practical Computing *magazine*

"Japanese HDTV will be obsolete by the time it triumphs. In the 1990s it will simply replace the technology of 1940 with the technology of 1980. The line between 'television' – a business where Japan now reigns supreme – and 'computers' – where American industry holds the best cards – is blurring every day. The TV set of the future will be not an improved version of today's but a computer. The components of this computer are already being prepared in the workshops of such US firms as Intel, Apple, IBM, Texas Instruments, DEC, AT&T, Kurzweil Applied Intelligence, Sun, Next and scores of others. Most of these companies do not now see themselves in the television business. But if they pursue the promise of the technology with fierce entrepreneurial verve, they will have a far greater impact on the future of TV than Sony or Matsushita. The leaps forward in video/computer technology will take power away from the professional programmers and give it to the individual viewers themselves. It will put the viewers into the picture, allowing them to reshape the image as they wish, rather than treating them as inert couch potatoes. The new television/computers – if you will, telecomputers – will far exceed HDTV in presenting news and entertainment programs, as well as interactive games, educational material and commercial opportunities for active users. They will provide programs, not over the air, but digitally, through an ever expanding network of mostly fiber-optic cables."

George Gilder; *writing in* Forbes *magazine.*

"This Macintosh community is a family of well-wishers. Smiling faces. 'Kind of like Jonestown,' I say. The problem boils down to the one-vendor syndrome. Without clones or competition, how can one be critical? It's like a one-party political system. What this means is that engineers and users are dependent on Apple's goodwill for them to continue to exist as engineers and users. Since this situation is inherently uncomfortable, constant soothing and reassurance are necessary."

John Dvorak, *writing in his "Devil's Advocate" column in* MacUser *magazine.*

ALAN SUGAR TAKES ON THE RICH KIDS

"IF THERE WAS A MARKET FOR MASS-PRODUCED PORTABLE NUCLEAR WEAPONS, WE'D SELL THEM TOO."

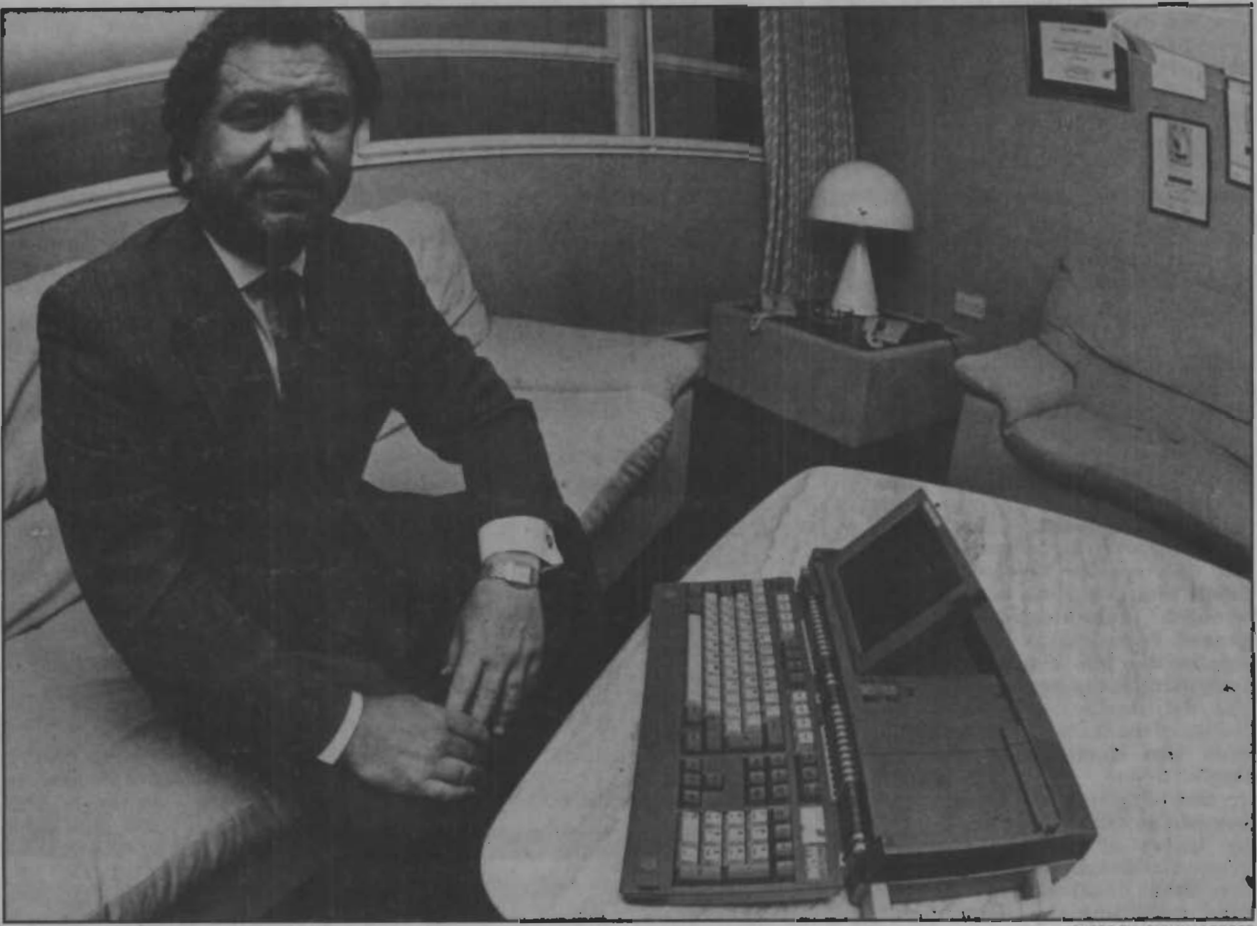


PHOTO BY JOHN WILDGOOSE

Less than a decade ago, Amstrad was a runt consumer electronics manufacturer, earning a considerable part of its revenue selling cheap, plastic dust covers for home stereos. Today, Amstrad has captured 25% of the entire West European market for personal computers. Company sales last year topped $1 billion for the first time, and pre-tax profits soared to $280 million. Alan Sugar, the company's founder and chairman is not your average PC manufacturing mogul. You might even call him a rough diamond.

By Richard Evans

Born in London's tough East End, then a rock-solid citadel of the Cockney working class, he left school at 16 to start his business career selling car radio aerials out the back of a van.

Proud of his origins, Sugar is a ruthless entrepreneur and salesman, who once said: "If there was a market for mass-produced portable nuclear weapons, we'd sell them too."

Amstrad doesn't belong to the Confederation of British Industry or any other business forum, because Sugar thinks they're a waste of time. Not quite "cricket" for many a more silver-spoon-weaned British businessman.

In fact, Sugar is widely regarded as a fire-breathing Visigoth with no time for wimps.

At Amstrad, little money is spent on public relations campaigns. The company's computers are built and sold cheaply and can sometimes be difficult to have repaired. "We're in business to make money," says Sugar. "That may seem remarkable to some people."

Sugar loathes the way many companies try to promote "friendly" images in the press. Addressing a gathering of British business students, he once jeered at such corporate sloganeering as "Pan Am takes good care of you. Marks & Spencer loves you. IBM says the customer is king. At Amstrad we just want your money." And they're getting it. Each year, Amstrad increases its sales more than almost any other computer company in the Fortune 500.

Yet Alan Sugar's stylized and insistent callousness belies a man of more complex emotions – and he is far from the model of a perfect Thatcherite entrepreneur that he's painted to be.

Sugar has kept quiet the fact that he gave $3.5 million to build an old folks' home in east London and $500,000 to the Great Ormond Street children's hospital. In 1986, he set up a personal foundation to process requests for charity support.

SUGAR VS. GRUB STREET

As if to keep his gentler side from the public eye, Amstrad's chief has frequently locked horns with the computer press.

In 1986, when Amstrad launched its first IBM clone, the PC-1512, the press was circulating rumors that the design of its built-in hard drive had an overheating flaw that made it prone to crash.

Sugar was furious, calling his journalist-accusers "irresponsible idiots". He sued and won a retraction, but the damage had been done. Sales of the PC-1512 slumped, and Amstrad had to forego the assault on the IBM business market it had hoped for.

Perhaps understandably, Alan Sugar now treats the press with unbridled scorn. "It often seems that these people end up writing about computers because they don't have the talent to do anything useful with them," snarled Sugar in a recent interview.

rently undertaking its boldest endeavor so far, unveiling a new, sophisticated range of IBM PC clones, the PC2000 series, to be marketed throughout Europe.

The most advanced of these machines, the PC2386, comes with 4 Mb of high-speed, zero-wait state memory (expandable to 16 Mb) and a standard 65 Mb harddisk. The PC2386 incorporates a 20 MHz Intel 80386 processor and boasts such features as 64 Kb of cache memory, and asynchronous expansion bus operation. All for US$4,800.

Sugar firmly believes that the new PC2000 range of computers can do everything that a high-end IBM PC can do. First launched on the British market last September, the PC2000 series of computers have elicited rave reviews from the computer press and from systems analysts and consultants.

"These are wonderful machines," believes Graham Clifton, joint managing director of Transam Micro Systems Ltd., a London-based computer consultancy.

"I have one on my desk. It's quiet, the keyboard is sturdy, and it has a very high resolution monitor. I think Amstrad is on to a winner."

DRAM DRAIN

Right now, though, Amstrad has more orders for the PC2000 machines than it can fill, and this is a real problem.

Amstrad manages to sell more cheaply than anyone else because they subcontract out the vast bulk of component manufacture to numerous low-cost suppliers in the Far East, directly employing only 500 people in that part of the world.

Sugar has long played the rogue tactics of playing off one supplier against another to get the unit price down.

As a result, until recently Amstrad did not control its production as well as it should have, and so fell victim to the ongoing shortage of Dynamic Random Access Memory chips (DRAMs) which began last year when Japanese semi-conductor manufacturers decided to squeeze the market (they make 80% of the world's DRAM chips). The current DRAM drought delayed the Europe-wide launch of the PC2000 series for nearly five months.

"The tide of the chip shortage is not turning," admitted Sugar recently. "It is in fact cramping our style." Or perhaps it was really Amstrad which had been cramping Amstrad's style.

Last October, Sugar moved to solve this major supply problem, spending $80 million on a nine percent stake in Micron Technology Inc, a U.S. microchip maker. In exchange, Amstrad now has the right to at least nine percent of the manufacturer's DRAM output.

PC2000 production has now dug itself out the hole, and the machines are starting to appear throughout Europe. It has also clamped down on quality control, sending its own supervisors to permanently oversee production in its suppliers' factories throughout the Far East.

In some ways, Amstrad today is like one of the big Japanese electronics houses back in the 1960's, on the point of transforming itself from a supplier of low-range consumer goods to a manufacturer of high technology for the professional world.

If Alan Sugar intends to take on IBM now, he can't afford any problems with quality control or production schedules.

As ever, Sugar is brimming with confidence. Amstrad is already number two in European PC sales.

"Our competitors tried to build up some sort of aura of mystery around the computer industry," he says, "But in fact, it's just the same as selling any electronic consumer goods. And we're out to prove that."

Richard Evans is a London-based freelance journalist covering mass produced nuclear weapons and other future high tech mass market products.

DAN WINKLER

HYPERCARD'S OTHER HALF

Apple's HyperCard software, bundled with every Mac that goes across the counter, has been a resounding success. What surprised everyone, though, was the level of interest shown by programmers and non-programmers alike in its embedded, natural language-flavored scripting system HyperTalk.

While Bill Atkinson has received almost all of the public credit for the design of HyperCard, Dan Winkler co-designed and implemented HyperTalk. HyperTalk's wide-ranging acceptance has been attributed to its versatility: it's both simple enough to be used by beginners, yet offers enough power for the development of commercial applications.

Currently, Winkler is working on improvements and additions to HyperTalk, as well as two books on the language ("HyperTalk – the book" with Scot Kamins, and "Cooking with HyperTalk" with Scott Knaster).

by Steve Rosenthal

"We're not language guys, we're just trying to build a product that works," Winkler admitted as he described the decisions that he, Bill Atkinson, and their co-workers made during the development of the HyperTalk script language for Apple's HyperCard program for the Mac.

But in seeking to build an accessible product for mass distribution in the international marketplace, Winkler and his cohorts were confronted with many of the key issues in human-computer language interaction.

Language, of course, is not the first way in which the casual user sees or interacts with HyperCard. The filecard-like program has a highly graphical user interface, with extensive support for point-and-click operations with a mouse.

But users who want to create their own projects, whether they be database-like or more graphical and interactive, quickly discover that graphics can only convey limited amounts of procedural information.

Consequently, HyperCard's designers added the ability to put a verbal script behind each graphic region. They also added a pop-up message box for a direct textual interaction with the program.

But having done that they realized that to give people full access to HyperCard, they needed to provide them with easy access to this HyperTalk scripting language.

KEEP IT SIMPLE

The first design issue, Winkler said, was simplicity.

With the resources and time available, and the Mac as the target machine, they couldn't expect to write a complete natural language system. But to make script writing attractive and accessible to ordinary computer users, they felt it was vital to lower the initial barrier.

"A lot of the design of HyperTalk was focused on the first time someone would see a script," Winkler said. "We wanted to make that as painless as possible, so you wouldn't be frightened off. When you first get up to scripting level and look at a script, we wanted it to be something you could roughly understand."

They also had to make the language reasonably efficient. "Regularity is important for the computer," Winkler confirmed. "Complexity in the implementation is costly because it takes longer to program, it's more difficult to debug, and it's harder to document. So we're looking for simplicity in the implementation as well."

The overall design of the language was more empirical than theoretical, according to Winkler. He reworked an initial design of Atkinson's early in the project, upon which they proceeded to slowly build up the features.

Either from their own work or from reports from testers inside Apple, they would find items that seemed worth adding to the language. But rather than add the feature directly, Winkler said, they'd try to find out what was behind the request.

"We would say: 'What do you *really* want to do?' Because complexity is such a killer, whenever a feature went in, we wanted to be absolutely sure that it was worth its weight. So we would try to find the simplest way to give them that, and also provide other features as well."

When a feature was accepted for inclusion, they also had to design a suitable syntax. "We thought about how it would sound natural in English," Winkler said. "Then, we looked

ELECTRIC WORD

KNOWLEDGEPRO

WHAT HAPPENS WHEN HYPERTEXT MEETS AUTHORING SYSTEM

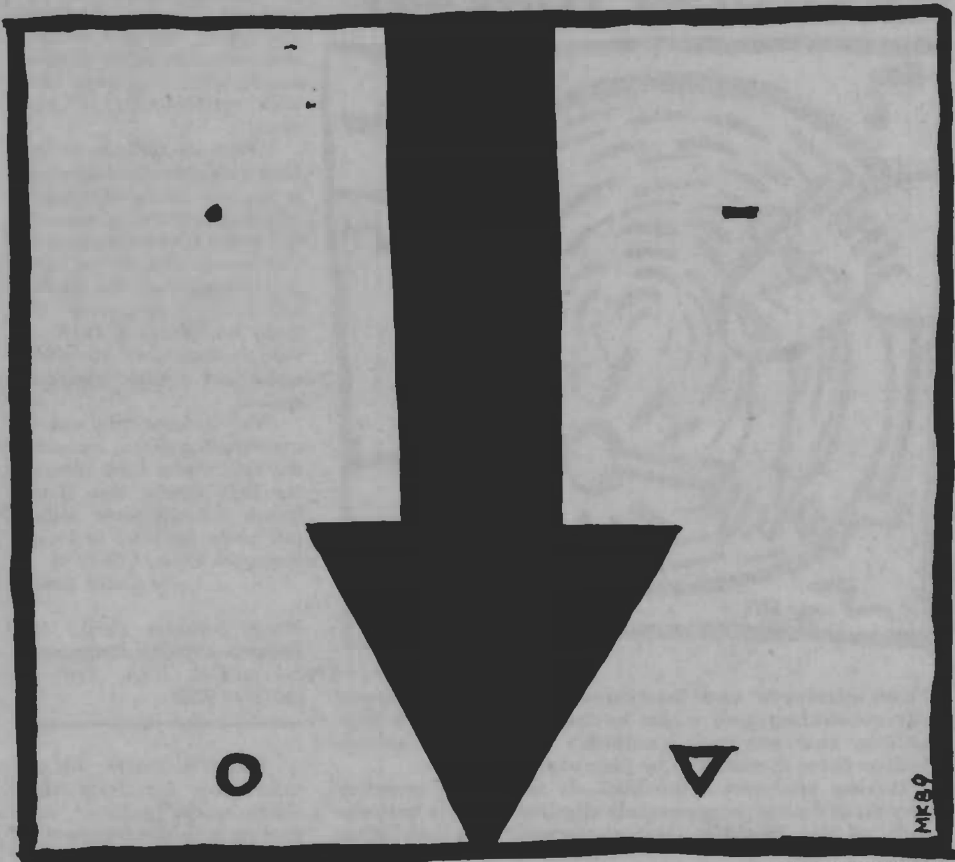


ILLUSTRATION BY MAX KISMAN

Knowledge Garden's KnowledgePro is an attempt to marry the concepts of hypertext with expert system technology. The stated goal is to create a program for "explaining" topics.

Hypertext is based on the realization that documents don't need to be stored in linear form when they're stored electronically. Text can be allowed to branch out into interrelated threads, forming a kind of information network.

In fact, hypertext has been a buzzword for the past year, and many microcomputer software packages claim to have "hypertext" capabilities, although this usually means the program only has some kind of cross-referencing function.

While the most widespread hypertext-*like* program is Apple's HyperCard for the Mac, the first *real* hypertext program was Guide from Owl Systems, available both for the PC and the Mac.

Both offer an interactive graphical environment in which the user can build hypertext documents by entering text and adding elements such as buttons and links.

PROGRAMMING

KnowledgePro is a different sort of hypertext system. First, it is based entirely on an internal programming language, rather than having elements added and edited by the user. Indeed, the manual refers to KnowledgePro documents (or programs) as knowledge bases.

This has advantages and disadvantages. As a programming language, rather than an application, it is much more flexible and customizable. On the other hand, it is much more difficult to create hypertext documents.

Unlike most hypertext programs, KnowledgePro does not offer a graphical user interface, but uses the standard DOS text mode. And the user interface was designed with this in mind.

Compared to graphically oriented programs, it's positively boring. But all that graphics pizzazz takes a lot of computing power. And by choosing a text mode interface, Knowledge Garden allows owners of humble 8086 machines to have hypertext on their systems.

(continued on next page)

VOLKSWRITER 4

FIRST WP WITH GRAMCHECK

The release of Volkswriter version 4 in January of this year marked a step-up in the evolution of the wordprocessor: the dawn of PC-based proofreading – courtesy of Houghton Mifflin's built-in Perfect Grammar.

Just as spellcheckers, hyphenation routines, and thesauri elevated wordprocessing beyond simple editing and layout, VolksWriter's built-in *gramchecker* takes it further: beyond such clear-cut issues as whether a word is spelled right, or what its synonyms and antonyms are. Grammar checking treads into the nebulous worlds of syntax and sentence structure – even good taste.

Unfortunately, as it stands, Perfect Grammar's significance lies more in what it promises for the future than offers today. In other words, it's not yet good enough to be considered a serious writing tool, mainly because of its numerous bugs.

On some test documents, it was fairly restrained, making a few reasonable suggestions. Watching it process a text, you could see that its operation was partly algorithmic and partly pattern-based. It did catch punctuation errors that spellcheckers usually miss – at least that's useful.

A serious issue will remain the fact that, to be usable, grammar checkers require a lot of memory to store patterns and other kinds of data. When Perfect Grammar is active, VolksWriter can only run on an almost bare 640 Kb system – forget any miscellaneous drivers or utilities you might be accustomed to using.

Future developments will depend on either yet more kludges within DOS, or a new, more powerful, operating system. On the one hand, I get the impression that it will take machines of another magnitude of power and resources before grammar checkers become as mainstream as spellcheckers.

On the other hand, a lot of

(continued on next page)

COURSEWARE

FOR TEACHERS, FROM TEACHERS

Zurich-based Eurocentres offers a series of eight PC-based authoring packages for computer-aided language teaching in German, French, Spanish and Dutch. They let you write excellent practice and testing material to be used in conjunction with regular classroom work.

The programs are well structured and easy to set up. Even the inexperienced student or teacher should be able to develop courseware without so much as glancing at the documentation.

Three packages – *Gapmaster*, *Pinpoint*, and *Storyboard* – help pupils strengthen their inferential reading skills – and have fun at the same time. *Matchmaster* is for teaching the concept of "matches" as applied to word pairs, similes, and grammatical structures. Another package, *Wordstore*, is aimed at helping students create and expand their own disk-based dictionaries.

Choicemaster is the most elaborate package of the eight, offering skill-testing on the broadest scale. Teachers can use its framework to create their own multiple-choice test on virtually any topic. User-accessible help and a limit to the number of guesses allowed the student are options provided. The number of questions and answers, and their order, can also be easily customized.

Compared with much other CALL authoring software available, these programs are easy to use and have a price tag that make them affordable to most schools: about US$120 in Europe.

The approach and diversity of material show that these packages comply to the First Law of Educational Software: that they be written by people who themselves have experience at the chalkboard.

— Nelleke Dees

Eurocentres Learning Service S.A., Seestrasse 247, 8038 Zürich, Switzerland. Tel: +41 (1) 482 1065

JACK OF ALL TRADES

ILLUSTRATION BY MAX KISMAN

Version 5 of PCTools for DOS machines offers a vast range of services with just one goal in mind: to make life easier for you and your computer.

While I doubt that anyone could possibly make use of all of them, there's probably something here for everyone. File utilities, an editor, background telecoms, a backup program – all sorts of stuff. These are modern programs, clad in sporty menu-driven interfaces and bearing copious support for mice.

As is all too often the case these days, your ability to use many of the memory-resident programs will depend on how much memory your computer has, as well as on the other programs you're running – even though many of the programs bend over backwards to let you control memory consumption.

From formatting your floppy disks to encrypting your data – is there anything PCTools can't do? Well, yes. You'll still have to turn your computer on and off. Price: US$99.

— Colin Brace

Central Point Software, 15220 N.W. Greenbrier Parkway, #200, Beaverton, OR 97006, USA. Tel. +1 (503) 690 8090

CURATOR

SMART GRAPHICS ORGANIZER

The profusion of Macintosh graphics formats is both a blessing and a curse. But Curator, a desk accessory from Solutions, makes a serious effort to alleviate the symptoms. Functioning as a kind of clearing house for graphics, you can assign keywords to catalogue images and store thumbnail sketches for quick reference.

But more interestingly, Curator converts graphics between a number of formats. It can, for example, convert PostScript to a number of other formats (but not the reverse).

I was amazed to be able to convert a bitmapped MacPaint document into a PIC (QuickDraw) document, with objects that I could manipulate individually in MacDraw. Graphics can even be ported to MS DOS machines via IBM Encapsulated PostScript (EPS), for what it's worth.

The version I tested (1.05) handled large graphics somewhat sluggishly. So I presume that this would be one of the first things to be improved in subsequent versions.

At 150 Kb, the largest desk accessory I've ever seen: hard disk recommended. Price: US$139.95 **— Colin Brace**

Solutions International, P.O. Box 989, 29 Main Street, Montpelier, VT 05602, USA. Tel: +1 (802) 229-9146

WRITENOW

EMMINENTLY FUNCTIONAL

WriteNow is a wordprocessor aimed at the many Macintosh users who don't use a wordprocessor on a fulltime basis, who aren't interested in arcane keyboard combinations, who don't need macros and stylesheets, but who occasionally need to write letters, articles, and other lightly formatted documents.

That being said, some of its most vociferous supporters are those who have used stylesheets, macros, etcetera, but who are nonetheless delighted by its intuitive interface and extremely stable nature.

WriteNow was highly praised when it first appeared approximately two years ago. It was admired for its economy, speed, and almost flawless WYSIWYG display. Version 2 has retained the characteristics of the earlier version, making only the most modest improvements.

One of the few things Version 1 was faulted for – and rightly so – was its inability to export text, or ASCII, files. Version 2 has remedied this flaw, offering text-exporting abilities internally and conversion to MacWrite format via an external utility.

Other improvements include smart quotes (""), decimal tabs, and word and line count. Mac users would do well to consider whether they ought to pay the exorbitant prices being asked for packages like Microsoft Word and WordPerfect (not to mention investing in extra memory to satisfy FullWrite) for features they don't need if WriteNow can satisfy all their requirements.

The only thing keeping it from being a supreme writer's tool is its lack of standard editing commands available from the keyboard: no delete character right, delete word, delete end of line, delete to end of page, etcetera. As a compromise, the cursor keys are now supported.

Apart from that, WriteNow 2.0 offers a valuable shin-up to the MacWordWorker's hand-to-mouse existence.

Runs on any Mac. Price: US$199. **– Colin Brace**

T/Maker, 1330 Villa Street, Mountain View, CA 94041, USA. Tel: +1 (415) 962-0195.

WAKE UP

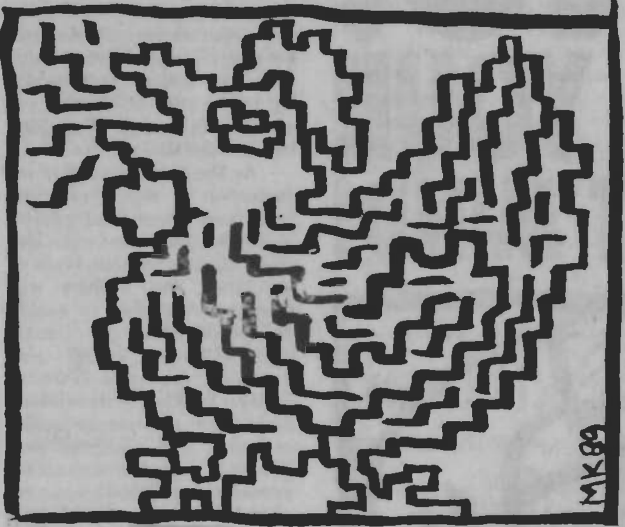


ILLUSTRATION BY MAX KISMAN

Smart Alarms is a Macintosh desk accessory for those of you whose Macs function as the Mission Control Center of your daily lives.

Open the SmartAlarm DA, and you can enter appointments you'd like to be reminded of and indicate how often, and at what intervals, you'd like to be reminded of each appointment in advance.

Smart Alarms appears to be stable and well-designed, and there are undoubtedly those who are able to adapt their daily regime to take advantage of such a program.

It's hard to recommend it to everyone, though. The problem with such a set-up – like phone diallers, calendars, and address books in your Mac – is that there's always the odd chance you might be somewhere without your Mac.

Requires Apple Macintosh with 512 Kb. Price: US$49.95.

— Colin Brace

Imagine Software, 19 Bolinas Road, Fairfax, CA 94930, USA.
Tel: +1 (415) 453 3944

MOVE ALONG PLEASE

Wordprocessing, document tracking, communications, terminal emulation? . . . Sounds great. But WordMover, from ominous sounding Computerease, is quite possibly one of the worst DOS programs I've ever encountered.

Start up WordMover and it flashes "LOG IN." It wouldn't accept anything I typed, beeping repeatedly at me. So I started pounding randomly on the keyboard, trying F-keys Control key combinations in the vain hope that a help screen might pop up.

Let's see: what about "Log In" in the index of the user manual? Sorry, no index. Paging through the first few sections of the manual was enough to convince me that it was obtuse, poorly edited, unattractive, and generally useless.

There might be a good program here somewhere, but it should be returned to its developer for a long period of gestation before we can tell. A program with an interface this bad might have been tolerated ten years ago, but definitely not now. **— Colin Brace**

Computerease, PO Box 170, Warren, RI 02885, USA.

SOFTCOPY ROUNDUP

FORGET-ME-NOT: A SILICON ALARM CLOCK

A time-release TSR which you can program to wake you up from a CRT-induced stupor, plan your life, or send E-mail messages to your boss when you've snuck out to lunch with your secretary (BEEP! SEXISM ALERT – ED.). Its arcane command-line interface will be a welcome challenge to any hacker-in-training.

Sterling Castle Corp., 702 Washington St., Marina Del Rey, CA 90292, USA. Tel: +1 (213) 306 3020

SOFTWARE BRIDGE

A file transfer utility which handles about 20 or so PC wordprocessors, and several mini-based wordprocessors. Don't get too excited: some of the formatting always bites the dust. Hardly worth the trouble for a file once in a while, this is for mega-conversions from one wp to another. US$149.

Systems Compatibility Corp., 401 N. Wabash, Suite 600, Chicago, IL 60611, USA. Tel: +1 (312) 329 0700

SUPERPAINT 2.0

Wet and Dry Brushes! Spirals! Bubbles! Quill! QuickShadows! SuperFatBit editing – this Mac graphics program has more gee-whiz tricks than a dog has fleas. Yet it remains neither fish nor fowl, generating as it does QuickDraw, poor man's PostScript. Save up your allowance for the real stuff.

Silicon Beach Software, P.O. Box 261530, San Diego, CA 92126, USA. Tel: +1 (619) 695-6956.

DISKQUICK: A DISK LIBRARIAN

Tames those rampant collections of Mac floppies. Also uncovers all sorts of junk you've accumulated on your harddisk. It generates lists of files, one list by filename, the other by volume/folder. Can even be trained to keep track of non-trivial matters like backups.

Ideaform Inc., P.O. Box 1540, 612 West Kirkwood, Fairfield, IO 52556, USA. Tel: +1 (515) 472 7256

PERSUASION

Presentation software is the software industry's flavor of the month. Much in favor with middle managers struggling to keep their bosses from noticing the paucity of their ideas. This is the breakfast cereal approach to communication: just how much snap, crackle and pop in *your* next meeting? Why take any chances on getting that promotion when you have 16 million colors on your Mac II at your disposal?

Aldus Corp., 411 First Avenue South, Seattle, WA 98104, USA. Tel: +1(206) 622 5500

EXTRA: THANKS FOR THE (EXTRA) MEMORY

This one keeps those feisty little TSR buggers from taking a swat at one another while loaded together in your PC's memory. You can add as many TSRs as you want to Extra's menu, and it will swap them in and out of active memory as needed.

Delta Technology International, Inc., 1621 Westgate Road, Eau Claire, WI 54703, USA. Tel: +1 (715) 832 7575

TO DO!

Hate to break stride while computing to hunt for your paper To Do list, then when you find it forget why you wanted it in the first place? Then this DA is for you. Simple, well designed and effective, and at 10 bucks, the price is right.

Andrew Welch, Mark 3 Software, 29 Grey Rocks Road, Wilton, CT 06897 USA good old name of "cybernetics," to explore sensorimotor knowledge such as movement and orientation.

Bottom-up Moravec reckons "the fastest progress can be made by imitating the *evolution* of animal minds" by pursuing first perception and mobility, then adding modules one by one so that the machine can eventually learn to evolve on its own, having generated an internal model of itself – the current top-down AI goal – complete with conditioning software. Or "pain" and "pleasure" to you and me.

Great stuff. But what about all the billion-op(eration)s, billion-bytes-of-memory computer power needed to crank out all these scenarios before the poor beastie decides whether to turn left or right?

No problem, says Moravec in his second chapter on Powering Up. Synchrotron radiation promises to shrink mass-produced computer circuitry into the submicron region, thereby speeding up calculation time to the desired 10 tera-ops threshold.

And if that ain't enough, nanotechnology is just round the corner: design a new protein on your computer screen, then build it as a micro-robot to grab atoms, hold them in place and so build new nanomachines to organize the very molecular structure of the processors you need to speed up your super-computer. Yeah, natch.

Once you've tooled up, you've got to be able to communicate with your machines, and Moravec foresees us all wearing "magic glasses" - a pair of specs with miniature TV cameras, microphones, earphones, a computer able to generate images, sound and speech and a high-speed data link to all electronic libraries and other computers in the universe.

The glasses will allow the computer to control what you feel and hear, respond to your verbal requests and call up, say, routing programs when you're out hiking, or info on anything you need while you're out driving in your car.

MESSY SEX

Extrapolating from the advances made in human-computer interaction by the Macintosh iconology, Moravec uses the term "bare-hands programming" to define our increasing reliance on visual interfaces with computers.

Moravic: "What we need to improve our performance is explicit external metaphors that can tap our instinctive skills in a direct and repeatable way."

Interestingly, Moravec never evokes the question of natural language itself as an interface. No doubt the synthetic world of digitized imagery aided by tactile and oral channels will no longer be the "physical" referent of our verbal signs.

And instantaneous reaction speeds will remove the need for "commands." Language will have lost its primacy as a communications medium.

The next step in Moravec's ruthless logic is to imagine how the technology he has predicted will help us beat Father Time. A robot brain surgeon using a high-resolution brain-scan will transplant your mind to a computer, where, as a program, it can be transferred over data transmission networks, merged with another mind-program, and thus avoid the waste and mess that merely earth-bound sexual reproduction offers as a way of bundling packets of genes into potentially interesting new combinations.

The philosophy underpinning this mystic vision - "our speculation ends in a supercivilization, the synthesis of all solar-system life, constantly improving and extending itself, spreading outward from the sun, converting non-life into mind" - reminds me of that first set out by Norbert Weiner in his "Cybernetics" about 30 years ago.

Weiner postulated that a mind was a pattern that didn't depend on a unique physical medium to exist. Extending the computing metaphor, we can have "back-ups" of our minds. Could be useful if you smash your magic glasses one day and drive over a cliff into a black hole.

Even more thought-scrambling is the idea that our mind is not even a unique pattern: its fundamental topology can be maintained even when it is bent through successive catastrophes of complex transformations.

We could even retrieve "minds" from the past using powerful simulators and then download them into a physical body. "'Morning, Hitler! 'Morning, Nero!" Goodbye World.

Organized as it may seem, postbiological culture will not be perfect, and software viruses and bugs will develop just as today. After presenting some interesting case histories of current computer epidemics, Moravec gears up for the usual flight into the empyrean.

"If disease makes us sexy and sexiness makes us smart," he says, in a swift summary of sociobiology, "we can expect that digital wildlife (i.e. viruses) will similarly make the data world more diverse and much more interesting." You bet.

THE MORAL

In the last chapter, revealingly titled Breakout, we are treated to a meta-Hofstadter parable based on Conway's famous Life program, and designed to help us understand the . . . err, meaning of the universe.

Cellular automata start dialoguing with the programmer who has generated the simulation program, eventually deciding to collaborate on an exploration of the whole universe.

Moravec clearly wishes us to see our own "dialogue" with the universal programs of sub-quantum physics, non-deterministic polynomials – he devotes an appendix to their outer-edge significance – and top-end computerology as a way of trying to figure out the universe "from the inside."

However, in the process of trying to imagine how the hell we can get in touch with the great programmer in the skies, any ideas you had of space, time and reality get clobbered once more, and I returned from this rapid trip through post-almost-everything feeling about as smart as pencil sharpener.

This is a serious book, written by a scientific moralist. The author believes strongly in the virtues of engineering for improving our biological lot. As a work of popularization it's pretty demanding, but continually exciting.

Maybe Moravec already thinks like one of his mind kids. But I liked what is becoming a minor and rather human tradition in books on computerdom: his proud listing of the hard- and software that helped him write and design his book – in this case a collection of Mac packages.

And I did appreciate the way he (or his editor) is always careful to use *she* as the indefinite anaphoric pronoun for human beings.

Wendy-Jo Nascler lives in Clochemerle, where she researches on anagrammatic viruses in writing software.

TALK ABOUT WHAT?

Do you want to talk to your computer? And would you like your computer to talk to you? Personally, I'm inclined to say: "Well, sometimes – it depends." What it depends on is the task at hand and the setting in which that task is carried out. And if the task and setting call for spoken interaction, it depends on how well the machine will understand me – and I it.

"Speech and Language-based Interaction with Machines: Towards the Conversational Computer," by John Waterworth and Mike Talbot (Ellis Horwood Publishers, Chichester, 1987)

By Harry Bunt

Waterworth and Talbot have written an unusual book about the attempts currently being undertaken to build "conversational systems." That is, computer systems that allow the unrestricted, virtually error-free, input and retrieval of data in spoken natural language.

For anyone who works in the field, it's an easy book to read, touching on a variety of interesting issues. And yet, these authors could have done a much better job.

Since it presumes a fairly elementary level of knowledge on the part of the reader, it should be of value as a general introduction. But even as such it's unbalanced. For a completely non-technical audience, at times it's too technical. And for a technical audience, it is often unnecessarily superficial. Moreover, it isn't always up to date and misses quite a few important developments.

Reflecting the title, the book divides into two parts. The first, consisting of four chapters, is about speech technology. The second deals with issues in the design of natural language conversational systems, regardless of whether the interaction takes place in spoken or text form.

antecedent for pronouns) and content word reference (various words or expressions in the text can refer to the same entity of meaning).

The main types of clue examined include: thematic progression, or how concepts flow from sentence to sentence; theme-rheme, where each sentence says something (or a rheme) about something else (a theme) and those elements can be identified as to their positioning in the sentence; focus, or the essential point of a sentence; logical connectives (words such as "therefore," "but," "moreover," etc.); and grammatical features such as the role of the definite article in referring back to previous occurrences of the same entity.

A refreshing aspect of the book is that the authors actually bother to consider how real people operate: how the writer creates text coherence (economy vs explicitness, new vs shared knowledge, etc.) and how the reader understands it (expectations, short-term and long-term memory).

Even the translator is granted some attention – a rare attempt in computational linguistics literature. Papagaaij and Schubert look at how text coherence is conveyed, and sometimes recreated, in the target language, and by what means, including various compensations due to differences in the linguistic material available in each language.

In their description of how high-quality human translation is achieved, the authors reach for the level of FAHQT (fully automatic high-quality translation).

The main part of the book is straightforward and concrete, and clearly aims at popularization. It is based on a single real-life sample text rather than on a series of "forged" examples, which gives more credibility to the description – at the price of demonstrating somewhat less successfully the principles discussed.

The book's final chapter deals with the intricate issue of how to integrate text coherence features into machine translation. The level of discussion is more abstract than in the rest of the book, ending on the interesting question of how much understanding (including pragmatics) is necessary for machine translation.

All in all, a stimulating introduction to discourse analysis in machine translation.

Claude Bédard is a Montréal-based freelance translator and MT consultant.

CAT
OUT OF THE BAG

"Computer-Aided Translation: An Industry Survey," Martin J. Ingall (Coolidge Hall, 5th Floor, 1737 Cambridge Street, Harvard University, Cambridge, MA 02138, USA, 60 pages, 1987). Price: US$125

By Tony Whitecomb

This report was written under the direction of Professor John Kao of Harvard Business School, and – at least originally – prepared on behalf of MELC (the Middle East Language Corporation), producer of a new system being developed by Dr. Wilson Bishai and claimed to be sophisticated enough to cope with the grammar and style of newspapers.

The survey, which subsumes MT under CAT, is best in its coverage of US activities, especially in describing the rise of ALPS (the fall came after the report was written).

Views on CAT's commercial viability were gathered by interviewing American businesspeople. Their conclusion: no CAT system is cost effective yet, and no CAT company ever made a real profit.

Whereas US corporations seem to have little need for MT, substantial expectation from the intelligence community (CIA, NSA, FBIS) is expressed. The translation volumes of these agencies are secret, and Ingall modestly refrained from risking an educated guess.

Unfortunately, Ingall's report is weak on coverage of Japanese or European activities. Much of the material is cursory and – certainly for regular LT readers – obsolete. The claim that this is "the most comprehensive, indepth survey . . . including key information on Japanese CAT ventures" is patently absurd. Translation from or into Arabic does receive some attention, but little technical detail, such as dictionary size, is given.

If your boss can't afford a couple of weeks on the beach to work his way through Hutchins, then Ingall's neatly typed pages will give him a lucid and business-like intro to CAT for a rainy afternoon.

Tony Whitecomb is an MT developer in the Netherlands.

HARDCOPY ROUNDUP

"The CD-ROM Directory 1989," 3rd Edition, ed. Erin Cormack (TFPL Publishing, 22 Peters Lane, London EC1)

Yes, third edition, your eyes don't deceive you. This A4-sized guide to not just a few but all CD-ROM disks available looks huge at first, but less so when you realize at least half of the information is dedicated to company information, books, journals, conferences and exhibitions, and a glossary. If only it came on CD-ROM . . .

"Authoring Systems," by Peter Crowell (Meckler Corporation, 11 Ferry Lane West, Westport CT 06880, USA)

This pleasantly informal book casually reviews the range of authoring software presently available, with the various pros and cons. Special attention is given to HyperCard, Apple's software bundled with every Mac. Still, in such an ephemeral market, it's hard to recommend a magazine article on the subject, let alone a book.

"Computing, Communications & Media Trend Monitor" (Aslib/TMI, Aspen House, 14 Station Road, Kettering, Northants NN15 7HE, UK). Price: US$204.

Don't let the imposing title frighten you. This little sucker packs a lot of bang. Researched by a staff of four – who seem to read just about everything computer-related – it breaks about every story down to one paragraph, at the most two. Number One looked a bit homegrown, but Number Three already looks good. Emminently skimmable. No ads.

"Studies in Computer-Aided Lexicology, ed. Martin Gellerstam (Almqvist & Wiksell International, Stockholm, Sweden). Price: US$45.

A collection of articles by a dozen or so Swedish linguists in honor of the 60th birthday of one of their own. Concentrates on lexicology between the Scandinavian languages and English. For the experts.

"Taking Off In The Information Industry," by Brian Stanford-Smith (Euripa/EIMDG, 1988). Price: US$10.

Explaining the success secret of flourishing businesses is a tried and true formula. This author examines the European information industries to discover what makes them tick. For all the entrepreneurs hoping to make a killing in 1992.

"The Good Software Guide," ed. Richard Jones (Absolute Research, Absolute House, 124 Leavesden Road, Watford, Hertfordshire, WD2 5EG, UK)

Don't decorate the magnetic media of your harddisk with just any software. Choose software that reflects the quality of your lifestyle as well as your good taste. For each product, they hit the nail right on the head with a paragraph or so. This comprehensive listing ranges from Accounting packages to Utilities.

"Communication Homme-Machine (Parole, Langage Naturel & Vision)," Actes des Premières Journées Nationales du GRECO-PRC. (EC2, 269/287 rue de la Garenne, 92000 Nanterre, France)

Divided into three sections according to the modes of computer interfacing, this 300-page collection of mostly technical papers, written by university research teams, gives a state-of-the-art survey of coordinated French work in the fields. Strong on speech processing and the construction of natlang "sounds" databases. Includes useful lists of labs, addresses and projects, good bibliographies and clear summaries.

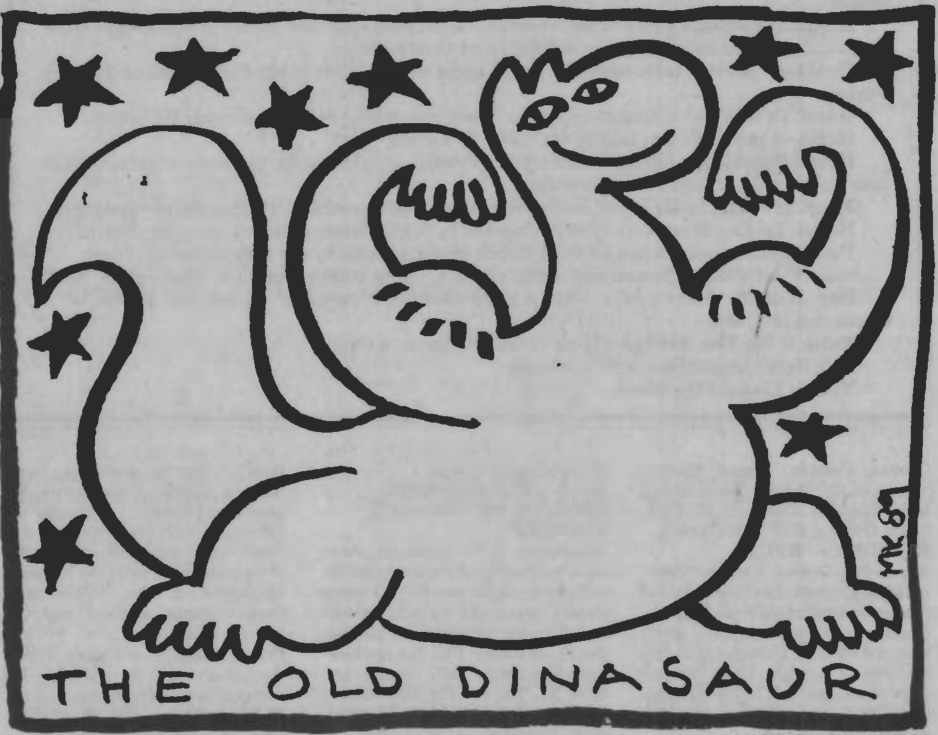


ILLUSTRATION BY MAX KISMAN

an example, we'll make a macro to select Helvetica bold 14-point (for a Hewlett-Packard LaserJet II with a cartridge) by pressing Esc-H. Before defining your own macro, press ^P= from the Edit screen and note exactly how the font is labelled. In this example, the label is HELV 14B US.

First, press Esc-? to change definitions, then press H for Helvetica (or any letter or number between 0 and 9). For the description, type Helvetica 14 pt. bold and press Return. For the definition, type the following line; don't be alarmed that although you press ^P before ^P and later ^M, it won't appear on your screen:

^P^P=HELV 14B US^P^M

Press Return twice and then answer yes to save the macro to disk.

9. If you're frustrated with the limits of Lotus 1-2-3 or Quattro when printing a company spreadsheet in a report, and wish it had some of WordStar's printing capabilities, use this method to make a cleaner presentation.

Type any preliminary text introduction to your spreadsheet, then press ^KR to read a block of text. Next enter the file name (including drive and path) of the Lotus or Quattro spreadsheet. WordStar will display the cell range of the entire spreadsheet. You can edit this and specify a smaller cell range if you wish. Then press Return, and the entire spreadsheet or partial range is loaded into your file as standard text to be formatted as you like.

10. If you frequently use alternate characters not normally available on your keyboard, such as foreign currency symbols, setting function keys with their values is often useful.

For example, to insert the Yen symbol into a document with a US version of WordStar and DOS, you would normally hold the Alt key down and press 157 on the numeric keypad. Instead, you could assign this operation to a function key with WSCHANGE.

First, enter the WSCHANGE program, selecting A (Console), then B (Function keys). Move the cursor to the preset function key combination you would like to replace and press Return.

The old definition will be displayed and you'll be asked whether to change it. Answer Y. For the new definition hold the Alt key down and press 157 on the numeric keypad just as before, and press End (*not* Return, because that would add a Return as part of the function key definition). Next type *Yen* as the function key label and press End.

At this point you can redefine other function keys or press X to exit.

11. If you use windows often, you may want to set one of the functions keys as the open/switch windows key (^OK). Follow the same procedure as in the previous tip, pressing ^O^K for the definition, then press End. Next enter *Window* as the new name for the function key label, press End, and then X as in the previous tip.

12. When using proportional fonts (those fonts that allocate more space for wider letters like *m* and less for narrower ones like *i*), you may find that what appears aligned on the screen is not aligned on paper, because each letter takes up the same amount of space on screen. This is especially annoying with indented text and columns created with tabs.

To remedy this, insert the align character (^@) by pressing ^P@ at the left edge of the text to be aligned. If you have any nonprinting control characters (like ^S, the code for underlining) in your text, press ^OB to hide them after inserting the align character to make it easier to see that all printing characters will align. Press ^OB again to display them.

13. Using the undo feature (^U) is a quick way to move smaller blocks of text like lines and paragraphs. To move a paragraph, position the cursor at the beginning of the paragraph and press ^QT-Return to delete to the end of the paragraph. (Note that paragraphs are defined in WordStar as the text between hard returns.)

Take care at this point not to perform any deletions, or your paragraph will be lost. Now move your cursor to the point where you want the paragraph to appear, and press ^U. The paragraph will reappear. To move a line, delete the line using ^Y and then undo the deletion as for a paragraph.

The size of the block you can safely recover using the undo feature must be a minimum of two characters and and a maximum of 500 bytes. If you attempt to delete a block larger than 500 bytes, you will be warned that you can't undo the deletion later and asked to verify the deletion. You *can* change this size limit, however, as we'll see in the next tip.

14. You can change the buffer size of undo from 500 bytes (approximately 100 words) up to 30,000 bytes (about 6,000 words). If you change it for the purpose of moving paragraphs, 1000 bytes is usually adequate. Enter WSCHANGE WS and select C (Computer), C 2 (Memory usage menu #2), and A (memory allocated for unerase buffer (bytes)). Enter the new buffer size in bytes and save your changes.

15. If you are a touch typist (which most WordStar users are) you may be suffering from a sprained finger from trying to reach the all-important Ctrl key on some later keyboards. First check to see if there is a switch underneath your keyboard to change the key assignments of Ctrl and Caps Lock (You must reboot your system after flipping the switch).

If your keyboard has no such switch, a program is provided with WordStar on the Advanced Customization disk called SWITCH.COM which swaps the Ctrl and Caps Lock keys to remedy this situation. Just type SWITCH before entering WordStar. SWITCH.COM is not compatible with all keyboards, but don't give up!

There are some third-party keyboard layout programs that can solve the problem, like FANSI CONSOLE from Hersey Micro Consulting (Ann Arbor, Michigan, USA).

David J. Clark is a writer and technical editor for Sybex Computer Books (Alameda, California, USA) and author of "WordStar Instant Reference."

ized by Mitch Hall Associates, P.O. Box 860, Westwood, MA 02090, U.S.A. Tel: +1 (617) 329 7466.

18-29 — TECHNOLOGY ENHANCED TRAINING
Shrivenham, England. Conference and Exhibition held at the Royal Military College of Science in Shrivenham. Call for Papers. Info: Network Exhibitions and Conferences Ltd., Printers Mews, Market Hill, Buckingham MK18 1JX U.K. Tel: +44 (280) 815 226.

29-5 AUGUST — 74th WORLD ESPERANTO CONGRESS
Brighton, UK. Info: Universala Esperanto-Asocio, Nieuwe Binnenweg 176, 3015 BJ Rotterdamo, the Netherlands. Tel: +31 (10) 436 1044.

31-4 AUGUST — 9th INTERNATIONAL CONGRESS OF IDV.
Vienna, Austria. International German Teachers' Association Meeting. Contact: Tagessekretariat, Mondial-Congress, Faulmanngasse 4/III, 1040 Vienna, Austria.

AUGUST 1989

1-3 — COMDEX ASIA PACIFIC
Sydney, Australia. Organized by The Interface Group, Inc., 300 First Avenue, Needham, MA 02194, USA. Tel: +1 (617) 449 6600, ext. 4029.

3 — 7th EUROPEAN SYMPOSIUM ON LANGUAGES FOR SPECIAL PURPOSES
Budapest, Hungary. Theme: Comprehension and Communication. Info: Mr. A. Szillissy, Technical University (Foreign Languages), Erdikarili ut., VII-21, 1157 Budapest, Hungary.

16-18 — MT SUMMIT II
Munich, Germany. Conference and Exhibition at the Hotel Bayerischer Hof in Munich. Follows the first MT Summit held in Hakone, Japan, last year. Sessions on Operational MT Systems, MT Systems under Development, and New Directions in MT Systems. Info: Deutsche Gesellschaft für Dokumentation e.V. (DGD), Westendstrasse 19, 6000 Frankfurt-am-Main 1, F.R.G. Tel: +49 (69) 740 805.

16-24 — 10th WORLD CONGRESS OF JEWISH STUDIES
Jerusalem, Isreal. Info: Ben-Zion Fischer, Council on the Teaching of Hebrew, P.O. Box 7413, Jerusalem 91071, Israel.

20-23 — TERMINOLOGIE ET TERMINOGRAPHIE
Brussels, Belgium. A series of evening classes leading to a certificat de terminologie at the Centre de Terminologie de Bruxelles, Institut Libre Marie Haps, rue d'Arlon 11, 1040 Bruxelles, Belgium. Tel: +32 (2) 511 9292.

20-26 — IJCAI 89
Detroit, Michigan. The premier forum for international scientific exchange and presentation in AI research, sponsored by the International Joint Conferences on Artificial Intelligence, Inc. Info: Dr. N. S. Sridharan, FMC Corp., Central Engineering Labs, 1205 Coleman Ave., Box 580, Santa Clara, CA 95052, USA. Tel: +1 (408) 289 0315.

SEPTEMBER 1989

11-14 — DOCUMENTATION ET TERMINOTIQUE
Brussels, Belgium. A series of evening classes leading to a certificat de terminologie at the Centre de Terminologie de Bruxelles, Institut Libre Marie Haps, rue d'Arlon 11, 1040 Bruxelles, Belgium. Tel: +32 (2) 511 9292.

17-20 — DICTIONARIES IN THE ELECTRONIC AGE
Oxford, England. Oxford University Press, Oxford University Computing Service and the University of Waterloo present the 5th annual Conference of the Centre for the New Oxford English Dictionary. Contact: Dictionary Department, Oxford University Press, Walton Street, Oxford, UK, Tel: +44 (0865) 567 67.

20-23 — WORKSHOP ON SPEECH INPUT/OUTPUT ASSESSMENT AND SPEECH DATABASES
Noordwijkerhout, the Netherlands. Sponsored by the European Speech Communication Association. Call for papers. Info: Institute of Phonetic Sciences, Univ. of Amsterdam, Herengracht 338, 1016 CG Amsterdam, NL. Tel. +31 (20) 525 2183.

26-28 — EUROSPEECH '89
Paris, France. The first biennial conference on speech communication and technology, a follow-up to the successful European conference on speech technology held in Edinburgh in 1987. Info: Secretariat, Eurospeech '89, CEP Consultants Ltd, 26-28 Albany Street, Edinburgh EH1 3QH, U.K.

27-29 — SIGED/ INFORMATICS 89
The International Information Management Congress conference on document management technologies. Info: Mr. Phillippe Kaigre, Orcotech, Tel: +33 (1) 42 77 42 77.

27-30 – 4th COLLOQUE INTERNATIONAL DE DIDACTIQUE DU FRANÇAIS COMME LANGUE MATERNELLE
Geneva, Switzerland. Info: DFLM, 10 rue Molitor, 75016 Paris, France.

29-30 — INTERNATIONAL CONFERENCE ON VOCABULARY AND APPLIED LINGUISTICS.
Lyon, France. Info: P. Arnaud and H. B. Ejoint, C.R.T.T., Université Lumière – Lyon 2, 86 rue Pasteur, 69365 Lyon Cedex 7, France.

OCTOBER 1989

3-8 — THE FIRST WORLD ELECTRONIC MEDIA SYMPOSIUM AND EXHIBITION
Geneva, Switzerland. Sponsored by International Telecommunications Union. Theme: Mass Media and Computer Applications Relevant to Both the Home and Business. Info: Book Fair '89 Secretariat, ITU, Public Relations Division, Place des Nations, 1211 Geneva 20, Switzerland. Tel: +41 (22) 99 52 36.

4-6 — PROTEXT V
The Fifth International Conference on Computer-Aided Text Processing and its Applications. Info: PROTEXT, INCA, P.O.Box 2, Dun Laoghaire, Ireland.

11-13 — 1st EAST-WEST ONLINE INFORMATION MEETING
Moscow, USSR. Exhibition and conference organized by Learned Information Ltd and the International Centre for Scientific Information will take place at ICSI headquarters in Moscow. Objective: to promote the exchange of scientific, technical and business information. Special deal making sessions are planned. Info: Learned Information Ltd, Woodside, Hinksey Hill, Oxford OX15AU, UK. Tel: +44 (0865) 730 275.

11-16 — 41st FRANKFURT BOOK FAIR
Frankfurt, Germany. Held at the Frankfurt Fairgrounds (Messegelände), this year's theme is a Focus on France. Info: Frankfurt Book Fair, Box 100116, D-6000 Frankfurt M1, F.R.G. Tel: +49 (069) 2102 218.

12-15 — 30th ANNUAL CONFERENCE OF THE AMERICAN TRANSLATORS' ASSOCIATION
Arlington, Virginia. Held at the National Clarion Hotel. Info: Dr. Deanna Hammond, Tel: +1 (202) 287 5777.

12-15 — EXPO–LINGUA 1989
Vienna, Austria. A follow up to the fairs in Paris, Milan, and Madrid to showcase new techniques and technologies for the language and knowledge industries. Contact: Wiener Messen and Congress GmbH, Messeplatz 1, Postfach 124, 1071 Vienna, Austria.

20-22 — 2nd SYMPOSIUM ON TRANSNATIONALISING SCIENTIFIC AND TECHNICAL TERMINOLOGY
Warsaw, Poland. Theme: International Terminology Brings Nations Closer Together. Contact: Professor Aleksander Dawidowicz, Organizing Committee Chairman, IOUTN, ul. Filtrowa 54/58 p1, 02-057 Warsaw, Poland.

25-27 — INTERNATIONAL KONFERENZ ZU CALL: COMPUTERUNTERSTÜTZER FREMDSPRACHENERWERB
East Germany. Info: Herman Gall, Wilhelm-Pieck Universität, Rostock, Institut für Fremdsprachen/Angewandte Linguistik, Richard Wagner Strasse 6, DDR - 2500 Rostock.

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7-9 — ONLINE 89
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8-11 — INTERNATIONAL CONFERENCE ON COMPUTER PROCESSING OF CHINESE AND ORIENTAL LANGUAGES
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8-12 — EXPOLINGUA
Frankfurt, Germany. Second Annual Language Fair held at the Frankfurt Messegelände. Info: International Where and How, Postfach 2464, D-5300 Bonn 1, F.R.G.

13-17 — COMDEX FALL '89
Las Vegas, Nevada. The 11th time. Organizers: The Interface Group, 300 First Ave., Needham, MA 02194 USA. Tel: +1 (617) 449 6600.

23-24 — INTERNATIONAL ASSOCIATION FOR LANGUAGE AND BUSINESS
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Moscow, U.S.S.R. Organized by the USSR Center for Translation of Scientific Technical Literature and Documentation. Topics will include Machine and Machine-Aided Translation; Automatic Dictionaries and Terminological Data Banks; Software and Technology of MT and MAT; Automation of Translation and Automatic Text Processing. Call for papers in Russian, English, French or German. Info: Computer and Translation '89 Secretariat, The USSR Center for Translation, Krzhanovskogo 14, Block 1, Moscow 117218, USSR. Tel: +7 (124) 70 24.

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An Indepth Look At Europe's

OR, IF LIFE HAD BEEN MEANT TO BE EASY, WE'D ALL BE SPEAKING EARTHLISH

By Geoff Pogson

Jean Monnet's dream is getting closer. You can sense it in small ways, like when you drive from Amsterdam to Sevilla without once having to fish out your passport. And as the bet-hedging politicians' balancing act between enlightened mutual interest and national *amour-propre* runs its deliberate yet inevitable course, the road to a United States of Europe beckons. But how will we communicate in the frontierless market?

The European Community's 12 member states are used to translating not just what they say to the world but even what they say to one another. Its institutions and economies currently address their 320 mn citizen-consumers in *all* its nine official languages, at a cost of $11 bn.

Nothing new there, you might say – Europe's always had "language barriers." But as the open internal market approaches, and business interests – in Europe but also worldwide – lick their lips for a plate-full of this tempting polyglot spread, the translation market is set to boom, too. Conservative estimates predict that demand will triple by the turn of the century.

In this issue, LT/Electric Word focuses on how the business world, as well as European institutions, are facing up to this multilingual challenge.

We examine the rationale behind Europe's multilingual creed, and how it's being put into practice in eight very different trans-European companies: from a ball-bearing manufacturer, through computer companies, to the media, advertising, and the legal profession.

We also look at what the EC itself is doing to smoothen our multilingual path. Is machine translation the answer to punishing deadlines and soaring translation costs? If languages are taught more effectively, will future European generations *all* lapse with ease from their native tongues into a lingua franca – English being the obvious candidate – and then, perhaps more haltingly, into third or fourth Community languages such as French, German and Spanish? Or is multilingualism in the long term doomed? Will English, already the worldwide lingua franca of business and the professions, eventually pervade and dominate so many layers of daily life throughout the continent that it will threaten the very existence of its fellow European languages and cultures?

By 1992, it will be 40 years since the war-gnarled Six set out on the long road to unity. 1952 saw the birth of the European Coal and Steel Community. The name alone betrays its *Wiederaufbau* vintage, evoking a smokestack reality most Europeans can now afford to disdain.

The latest – but by no means the last – milestone on that road is the 1987 Single European Act, which by 1 January 1993, when fully implemented, will have bound the European Community's now twelve member states closer together than since Charlemagne.

Of course, there's both a prize and a price. The price of unity is an erosion of national sovereignty: the Act's furthest-reaching constitutional effect is the replacement of the veto in the Council of Ministers by qualified majority voting. Unanimity in the decision-making Council might be nice, but oh so slow to reach.

What really captures our imaginations about the Act, though, is not such dry constitutionality. It's more the

ultilingual Challenge

flesh and blood of unity: the completion of the free movement of people, goods and capital within the EC – the culmination of 24 years of political horsetrading, set in motion by the 1968 Customs Union.

The prize: the creation of the capitalist world's largest internal market, with a population of 320 mn and a gross domestic product of $3553.8 bn.

E PLURIBUS LOADS OF 'EM

As an economic and political entity, the European Community is unique in one significant respect other than just size: namely in its member states' commitment to cultural and linguistic diversity.

Consider its two main rivals: the USA and Japan. Unlike the US, Western Europe is not a nation shaped by immigrant kids weaned from their parents' funny-sounding identity to act – and talk – like everyone else. And unlike Japan, it is not so paranoically monocultural that even an extended stay abroad is considered an ethnic aberration.

More than any other of the planet's geopolitical regions, Western Europe is the birthplace of languages and cultures that – through imperialism – shaped the modern world. Of the Community's nine official languages, three – English (with 350 mn native speakers), Spanish (200 mn) and Portuguese (130 mn) – are spoken far more widely outside their native countries than within them.

Of the rest, French (70 mn) – though losing irretrievable ground – can still claim to be a lingua franca in certain fields, such as diplomacy. German, Italian, Dutch, Greek and Danish – with imperialist impacts from modest to zero – are spoken by populations within the Community ranging from 60 to five million.

None of these nine parts would readily accept being swallowed by their whole – at least, not without a(nother) bitter struggle. And, curious as it may appear to outsiders, most Europeans seem to take a strange delight in their differences.

TRANSLATION MOUNTAIN

However, linguistic diversity doesn't make life any easier – nor less costly. Take, for instance, translation.

In 1987, of the 160 bn pages of documentation produced in the EC's member states, 100 mn had been translated by some 100,000 linguists at a cost of $11 bn. Most of that translation was from and into EC – that is internal market – languages, costing money that Americans or Japanese would presumably have spent on something else.

The translation load of European trade and industry has increased at roughly nine percent per year since 1983.

The institutions of the EC themselves are responsible for a veritable translation mountain. All documentation for public consumption – from acts and regulations to information brochures – is published in all nine languages. Everything else – internal memos, the minutes of meetings, etc. – is circulated in English, French and German only.

In 1988, the Court of Justice, Council of Ministers, Parliament, Economic and Social Committee, and European Commission (CEC) together translated 1,500,000 pages at a total cost of $173 mn – an increase of 50,000 pages for the fifth successive year, consuming up to 40% of the EC's administrative budget.

At present, as many as one-seventh of the EC's 17,000 fulltime workforce are linguists: roughly 2,000 translators and 500 interpreters. In addition, around 25% of translation and 50% of interpreting is contracted out to companies and freelancers – a share set to rise sharply over the coming years.

Continuing growth in the EC's translation load is reflected in the rationalization – cynics would say "just another word for expansion" – of its bureaucracy: on 1 June 1989, a new CEC Directorate General, the Translation Service, will be created to administer all translation within the institutions.

Machine translation currently crunches little more than one percent of the EC's translation load. In 1989, some 16,000 pages will be output by the EC's version of Systran. But appointee Commissioner for translation, Antonio Cardoso e Cunha, is keen to step up Systran's implementation, especially for the "quick and dirty" translation of short internal documents with pressing deadlines.

HEAD-ON

Outside the publicly-funded bureaucracies, the business world, too, is fixing its gaze ever more keenly on multilingualism. As export markets grow, so does the need for translated manuals, sales brochures and catalogs.

This need is especially acute in the EC, now that product liability regulations compel exporters to supply all their orders with documentation in the importer's own language. But even translated text aimed outside the Community is on the rise. West German heavy engineering company Krupp, for instance, is currently translating proportionately less into English and French, and more into Russian and Chinese.

The translation load of European trade and industry has increased at roughly nine percent per year since 1983. In that year, Krupp translated 37,000 pages; the figure for 1988 was 60,000. In 1987, Swedish telecoms giant Ericsson, whose total turnover was $4.6 bn, spent $1.53

mn on translation, around four percent of its total documentation costs and a six percent rise on the previous three years.

These days, all large European companies employ fulltime translators. However, there is a general trend towards contracting translation work out. Shell Petroleum has between 30 and 35% of its translation done outside, and Bayer 65% – for the German pharmaceuticals giant, a twofold increase since 1983.

This trend is reflected in the growth of translation/documentation service companies, which arose from nowhere in the early 1980's: Lexitech, Ink International, Alpnet and others. Lexitech, Europe's largest, saw a rise in turnover from $2.7 mn in 1984 to $7 mn in 1988.

As for machine translation, though still conventionally viewed with skepticism, its use is growing. Customized versions of Alpnet's CAT software are installed at the Ford Motor Co. – as well as at Xerox's UK-based translation operation, where Systran is also used. In West Germany, automaker BMW is currently installing Logos. And UK diesel engine maker Perkins Engines has been using Weidner MicroCAT, much to its own satisfaction, for the past three years.

Some large companies are tackling natural language processing head-on. Siemens is now marketing, as well as using, its own mini-based Metal MT rig. And Philips' Rosetta, while still in development, is planned for commercial release by 1991. As for IBM's two "intelligent" MT projects, under research at the company's American Thomas J. Watson Center, both are intended for eventual inhouse use. However, projected completion dates – even to the nearest decade – remain a Big Blue Secret.

ENGLISH UNIQUE

Of course, even the most ardently multilingual of firms will never translate each and every message it generates. Total multilingualism – in which every transcultural conference, meeting or phone call would be accompanied by a battery of interpreters – would make current translation costs look like chump money.

To this – as to most problems – human beings first improvise solutions. Any roomful of varied-linguals will always soon discover the common language most of them speak best. And in business circles, that language is usually English.

Many companies have formalized this state of affairs. Almost all US and Japanese companies make their international operations talk exclusively with each other in English. As do most Scandinavians.

At Swedish office equipment maker Esselte, for instance, all communication with distributors and wholesalers outside Scandinavia is in English.

Even South European companies are adopting this global English policy. The official language of France's Alcatel is English. Italy's IVECO heavy truck company, based in Turin and backed by pan-European capital, conducts all its business in English.

In the late 1980's, the English language is a unique world asset. Over the past forty years, it has grown into the world's first and only truly international language. And not just in the realms of trade and industry. Worldwide institutions such as UNESCO and the WHO – even OPEC, with no English-speaking member states – communicate exclusively in English, as do those working in the world's air and shipping lanes.

More than half the world's scientific and technological publications appear in English – university students everywhere would be lost without it.

Even less taxing brainfare – mass entertainment – is increasingly being dished up in English, aided and abetted by satellite TV. And although pan-European Super Channel and Rupert Murdoch's Sky, both all-English, have so far flopped commercially, there is a young and growing audience for their seductive ilk – especially in those smaller North European lands where the kids talk rock 'n' roll English but where Protestant earnestness has ill-equipped their parents to turn the pursuit of triviality into a homegrown industry.

Worldwide, between 700 mn and one billion people speak fluent English – one fifth of the world's population – either as a first, second, or "official" language. And that proportion is growing year by year. As Robert Burchfield, chief editor of the Oxford English Dictionary, put it: "Any literate, educated person on the face of the globe is deprived if he doesn't know English."

KNOW YOURSELF

The universal ascendency of English as a lingua franca raises the question of whether European multilingualism is not just a colossal waste. Why shouldn't all trans-European business – official as well as commercial – be conducted just in English? On the proviso, of course, that *every* European be able to speak it.

There is sympathy with this view, albeit subdued, among some Europeans. It often comes out in jibes at those most sullen of transcultural partypoopers: the French.

But when the French insist that every EC syllable be at least repeated – if not first uttered – in their native tongue, are they just being bloody-mindedly "chauvinistic?" Or is this a reasonable reaction to the threat – real or imagined – of extermination to one's cultural identity?

The question is an apt one, since multilingualism has everything to do with cultural identity. If language were nothing more than a primordial code – a means of getting someone to pass you the salt – there would be no problem: we might as well all just speak Earthlish.

The universal ascendency of English as a lingua franca raises the question of whether European multilingualism is not just a colossal waste.

But the fact is that each human language encapsulates its own culture's psyche more completely than any history book. As such, it gives us a unique window on who we are and what the world – our tribe, society or nation – has made of us. So people feel attached to their language, write poetry in it, like the idea of its surviving them, and have views on its use and abuse – especially in the mouths of their children.

At the heart of the multilingual creed lies the axiom that for a language to thrive, it must be able to serve its users in as many fields of discourse as possible. You ought to be able to do anything – write a neurosurgical textbook, say your prayers, fill in a tax form, stand trial, buy a second-hand car, and make new friends – all in your native tongue.

The truth, of course, is that this is decreasingly possible. As instanced above, the world's only fully functional language is English. And this is the cultural dilemma for which multilingualism attempts to find a compromise.

On the one hand, we need English – or Spanish, or some lingua franca – to speak to the world. On the other, we fear that if our own tongue loses so many functions that its only domain remains the intimacy of the home, it will dwindle into a dying patois, retreating from suburbanism, to be mulled over sadly by dialectologists with tape recorders. Among the EC's nine official languages, Dutch and Danish would be the first to go.

The EC's acknowledgement of this view is evidenced by its support for Western Europe's "lesser used," and most threatened, languages: Irish and Scots Gaelic, Welsh and Catalan, Gallego, Basque and others – with a total of around eight million speakers.

This year, the European Parliament voted a modest $1.1 mn for projects aimed at bolstering them. These included a centre for immigrants to Wales to learn Welsh, subsidies to children's book publishers, and the preparation and publication of an Irish-Breton dictionary.

Those who ask "why bother?" might reflect on what made multilingualism such a fundamental article in the pan-European catechism. The EC was founded amid the ashes of an own-goal disaster called fascism, a European ideology for which the denigration of foreign cultures was a central tenet.

TONGUE-TIED

Of course, not all Europeans are such chatterboxes over the border.

Europe's most fluent linguists – though hardly representative, their own official language being a foreign one – are the 350,000-odd Luxembourgeois, 89% of whom can speak two or more foreign languages. Runners-up are the Dutch, where 29% speak one foreign language and 44% more than one. Bottom of the class come the Irish, 80% of whom are monoglot, and the Portuguese (14% one, 10% more).

Of those 35% of Europeans privileged enough to have mastered one or more foreign language, 51% can speak English, 42% French, and 38% German.

In the light of such realities, the EC has committed itself to the promotion of foreign language learning. In May 1989, the Council of Ministers will approve the $330 mn Lingua project, conceived by the Commission's Directorate General for Education (DG5) and aimed at increasing both the quantity and quality of foreign language learning in EC member states (see the article on EC language policy, directly following).

Individual member states are also pushing language learning. This is especially so in the UK, where the tongue-tied Briton abroad (20% one foreign language, six percent more) has long been a stock caricature for self-ridicule.

The UK Department of Education and Science is currently funding a network of 12 regional "language-export" centers, called LX's, which provide companies with a diagnosis of their staff's language needs and training geared to specific demands.

Meanwhile, in the private sector, language training is booming, too. Language-school networks such as Berlitz, Inlingua and Eurocentres report unprecedented growth. Berlitz – with more than 300 schools worldwide, 150 of them in Europe – has doubled its European lesson load over the past five years. Inlingua (198 schools worldwide, 153 in Europe) has been opening new schools at the rate of eight per year over the past five years.

At Swiss-based Eurocentres, with 25 schools, mostly in Europe, and where the lesson load increased by 5.5% in 1988, English lessons account for 54% of the total, with French at 24.5%, and German 8.5% – ratios which have remained steady over the past five years.

Perhaps there will come a day, once the United States of Europe have arrived, when we'll all be truly multilingual.

Some advocates – such as AEG's Helmut Mangold – envisage a polyglot continent where, while preserving all our native tongues, we will all have an active knowledge of one, and at least understand the rest, of the five major languages: English, French, German, Spanish and Italian.

On the other hand, maybe we'll all just be steamrollered by English, just as the Gauls succumbed to Vulgar Latin.

The former prospect sounds like wishful thinking; the latter sounds scary. In the meantime, we have to come to terms with the very real challenge of the multilingual realities of 1992.

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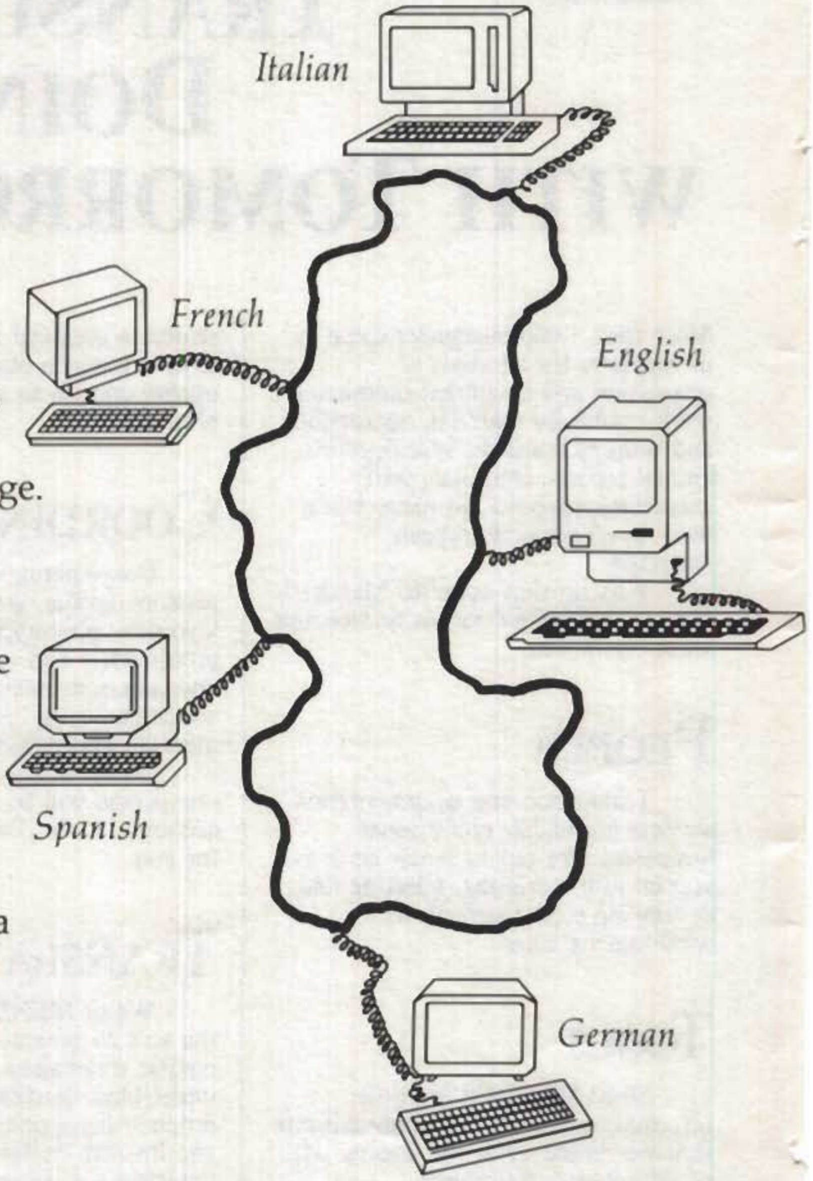
WE GIVE YOU THE SERVICE YOU DESERVE

Who'll make up the EEC after 19



In Europe's offices, laboratories, board rooms and science parks, not all talents are bound to be turned into polyglots.

Despite open borders and flourishing language schools, monolinguals will outnumber bilinguals, even in leading circles of business and industry. It's this barrier that continues to threaten the Old World's strength in the electronic age.

Of course, much depends upon your criteria for calling someone "bilingual". But then, even fully bilingual citizens are no panacea for a multilingual Europe.

Machine Translation for the decades to come will be geared to the needs of *monolinguals.* Difficulties in intelligent text interpretation will be sorted out in a computer-initiated dialogue (typically with the author of the text), quickly and smoothly – and entirely in the user's native language.

The system depicted above is being designed on the "layman user" principle. It will provide desktop communication straight across the EEC – and beyond. What's more, it has a unique architecture consisting of easily distributed language modules built around a powerful "interlingual" concept.

Tomorrow's industry standard for multilingual translation.

92, polyglots or monolinguals?

This system is under development at BSO/Research Labs in the Netherlands. It is called *DLT (Distributed Language Translation).*
As the name suggests, the actual translation process in *DLT* is split and distributed over the sending and the receiving parties' PCs – which may be thousands of miles apart.

This can only succeed by virtue of an excellent interlinking structure.

BSO is therefore investing in a specially selected intermediate language, compact but with full expressive power.

It represents a perfect compromise between scientific ideals and practical requirements (of system maintenance and cooperative development) inherent in a system of international scope and extended lifespan.

At the same time, *DLT*'s interlingual architecture, combined with techniques of AI and machine learning, is a booster to knowledge-based translation.

In other words, we're making our translating computer a little bit intelligent, to start with – just enough to make it an attractive partner to intelligent users.

And we know how to steadily increase the system's artificial intelligence, thereby reducing its dependence on interactive disambiguation.

DLT represents the safe route to truly automatic translation: without assistance from bilinguals, polyglots or post-editors. But meeting the quality standards of professional translators – no less.

The first *DLT* products can be on the market shortly after 1992.

The DLT project is supported by the Ministry of Economic Affairs of the Netherlands. BSO is a private company and a leading Dutch software house. DLT investments to date exceed 3 million ECU.

DLT

Distributed Language Translation – a multilingual system for computer networks.

BSO/Research Laboratories
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EC Policies For Coping

The European Community has an obvious problem: it is composed
obvious solution – an official lingua franca – is obviously impossi
everyone would perceive as her/his nation's cultural suicide? So,
politically palatable alternatives. And what could be more palatab
knight Technology.

"IF I HAD TO DO IT ALL OVER AGAIN, I WOULD START WITH EDUCATION." JEAN MONNET, THE DEAR DEPARTED FRENCH GRANDDADDY OF THE EUROPEAN COMMON MARKET.

With Multilingualism

of 12 countries that speak nine different languages. The

ble. What prime minister is prepared to vote for what

obviously, the Community is searching for other more

le than that old standby Education, and the new white

by Peter Rutten

The drums started beating years ago. "Concerns" were expressed by the all-powerful European Council of Ministers at their 1983 Stuttgart powwow. The 1985 Milan European Council repeated them. Then, in April 1988, the European Communities' executive/civil service arm, the European Commission itself, weighed in with a communiqué on the instruction and learning of foreign languages, discussed by the education ministers at their council that year:

"The free circulation and the freedom of settlement advocated in the Single Act will only be effective if European citizens become fluent in other languages than their mother tongue. However, in most member states, the situation as regards the teaching and learning of foreign languages is alarming." Thereafter the pace quickened.

In September 1988, "L'Assemblé des Régions d'Europe" adopted a plan on European multilingualism that was submitted to it by the French organization Le Monde Bilingue, which called for true bilingual education in European schools.

In November 1988, Spanish conservative member of the European Parliament G. Polledo introduced a resolution proposing that the Community ensure that schoolchildren in the member countries gain practical knowledge of two foreign languages, and that multilingualism in general be promoted. Parliament approved.

At the end of 1988, the European Communities' executive department in charge of employment, social affairs, and education, Directorate General V (DG V), delivered its proposal for discussion and consultation, which in a nutshell called for the spending of a lot of money – ECU 250 mn worth (US$ 275 mn) – to improve the teaching of foreign languages in the Community. It called its proposal Lingua. In February, the European Parliament adopted a report submitted by the Dutch liberal parliamentarian Ms. Larive which requested that the Commission come up with a medium-term educational program "to be fulfilled between now and the end of 1992," and calling for "the strengthening of community language teaching, so that at least two foreign languages are taught during the years of basic schooling."

And finally, corporate Europe, through its European Round Table, presented a proposal to the President of the Commission J. Delors for a European Education Development (EURED) program. The report proposes a "training model to be followed by the EC to improve its competiveness," which should, among other things, contain the teaching of not one, not two, but *three* community languages.

Et voilà! a program is born. To no one's surprise, on 14 April the European Parliament approved the Lingua program by an overwhelming majority, with two significant amendments. One, the Parliament wanted member countries to not merely promote foreign language learning, but to oblige it. And two, it increased the budget to ECU 300 mn, and requested that the project include small and medium-size enterprises. At press time, the program awaits final approval from the 22 May Council of Ministers meeting.

HOW THE COMMISSION SOLVES ITS OWN LANGUAGE PROBLEMS

SYSTRAN: SLOPPY BUT EFFECTIVE

The European Commission has a real need for help with its language problems. EC law mandates that important proceedings and reports be translated into the nine official languages. That means 1 mn pages of translation per year.

So while the EC has been busily funding Eurotra, since 1976 the European Commission has been busily using and developing Systran, the venerable machine translator which, because it was American, was the reason Eurotra was begun in the first place.

According to DG XIII, currently 35 people at the Commission are busy developing 12 Systran language pairs. Six of these are: English into French, Italian, Spanish (all three regarded to be good), German, Dutch and Portuguese. Then there's French into English, German, Dutch and Italian (also good), and German into English and French.

Here's Eurotra in action, English-to-French. The original:

"At the request of the Council and of the European Parliament the Commission organized during 1987 the evaluation of the Eurotra programme by a panel of independent experts."

The translation reads:

"A la demande du Conseil et du Parlement européen la Commission organisée pendant 1987 l'évaluation du programme Eurotra par un groupe d'experts indépendants"

In other words, a translation of awkward English into bad French.

At the Commission, Systran runs on an Amdahl mainframe under the VMS operating system. Translations are processed at the rate of about 500,000 words per hour. Access is routed through a Unix server connected to the Commission's internal network.

Ian Piggot

Translation requests come from both Luxembourg and Brussels. The system translates about 16,000 source pages per year, which is 1.6 % of the the average 1,000,000 source pages the Community produces in a year.

Systran users typically have a Unix or DOS workstation, though the general level of automation at the Commission is still pretty low. They use their systems for document drafting as well as for post-editing the target text. If a document is not available in machine readable form, it will probably be typed in by a typist. But increased use is being made of scanners and OCR software.

The Commission's translators make varying use of Systran. Some just look at the translation on the screen while they're translating the traditional way, others post-edit on paper or directly on screen. The Commission's director of Systran services Ian Pigot says it finds Systran particularly useful in situations where "traditional translation services cannot keep to tight deadlines."

The main aim of Systran is internal use, though the Commission may sell Systran services to public sector bodies in the member states. It has already signed contracts with Nato in Brussels, the Nuclear Research Center in Karlsruhe and the German Railways. The French company Gachot S.A. of Soisy-sous-Montmorency, owns the rights for the private sector (see LT 12).

KEY INTO OUR LANGUAGE TECHNOLOGY

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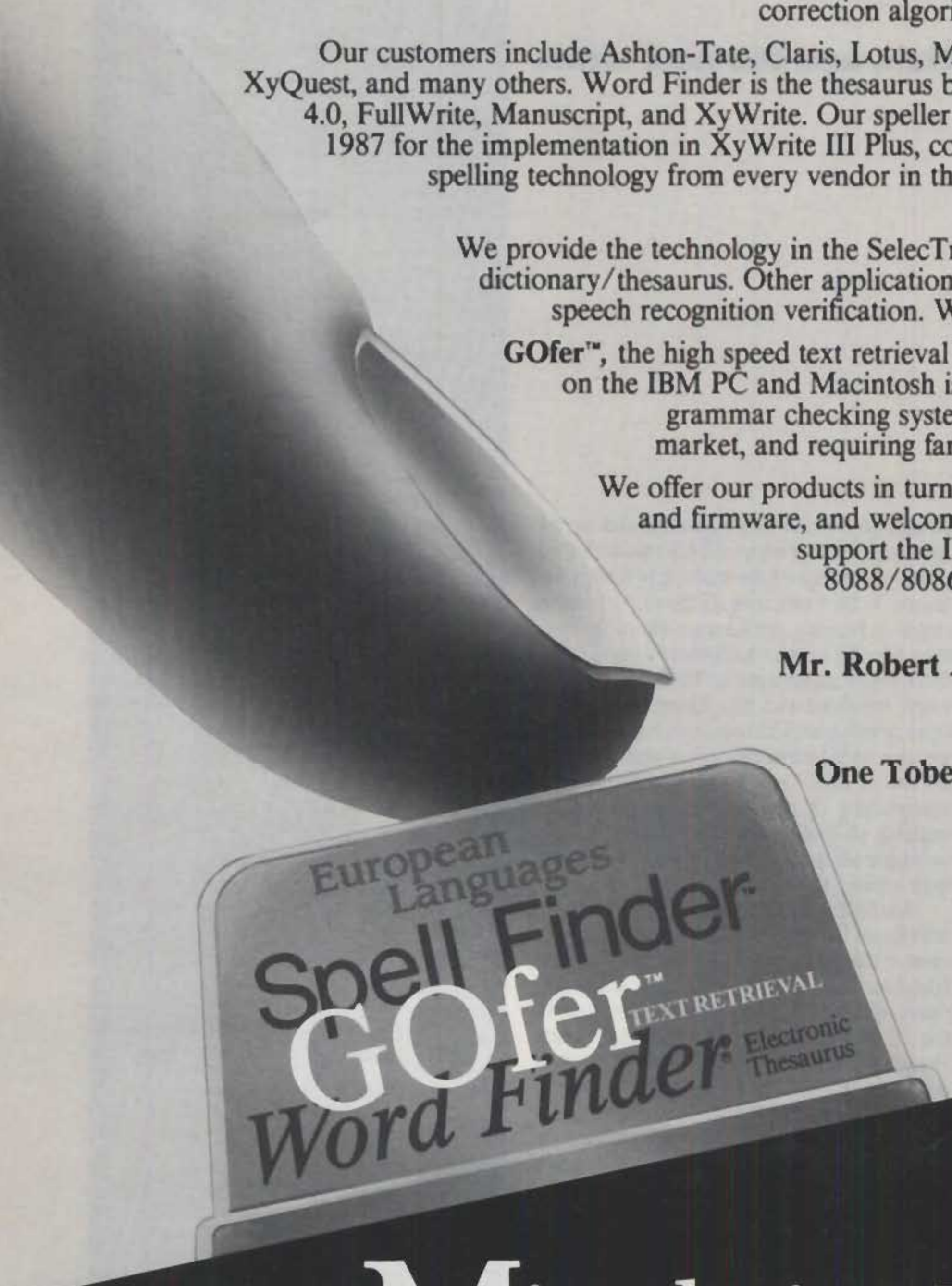

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EUROFUNDING OF LANGTECH

Eurotra may be the most disappointing language program the Commission has been nursing, but it's not the only fiasco. In the past few years, the Community has funded a grab bag of small and medium size projects in the text and speech processing area under the Esprit program (the ECU 5.7 billion – US$6 billion – European Strategic Programme for Research and Development in the Informtation Technology, aimed at developing the basic technologies to help Europe compete with Japan and the US). Some were successful. Some have yet to yield tangible results. Some have died slow and lingering deaths.

Take Ikaros, for example. The idea behind this project was that artificial intelligence techniques might be useful in interpreting continuously spoken natural language in a speaker independent speech recognition system.

"It was far too ambitious," admits F. Monnet of the Italian CGE. Lab de Marcoussis, one of the participants. Ikaros started under Esprit in 1986 and was meant to last 5 years *a raison de* ECU 10 mn a year. The project yielded nothing and was stopped after 2 1/2 years. About ECU 1 mn had been spent.

The Palabre project? "Collapsed," answers a DG XIII official dryly. Palabre was a study for an electronic version of the Yellow Pages with a speech recognition interface. The study's goals weren't achieved.

"This was never meant to become a product," H. Noyer of Cap Sesa in Rennes, France, one of the participants, defensively explains the project's fruitless end. "Nobody followed up on our research, and we didn't sell the resulting know-how to a third party." Palabre was funded to the tune of half a million ECUs.

Spin, the ECU 15 mn project for a speech interface in an office workstation needs an extension. "We were supposed to be finished by the end of June, but we want some extra time for a demo," says M. Brilman of Lab de Marcoussis, again, in Italy.

Brilman promises that the Spin team will have a small PC-based workstation ready in September, with a facility to communicate with it in spoken French and maybe Italian. The application, a train schedule, will reply in French, Italian, Greek and probably German.

J. Roukens, a former Esprit official at DG XIII, actually heard the system talk. He regards the capability of the speech synthesizer as "pretty good at French and reasonable at Italian."

THE END

According to D. Boillon of, again, the French participant Cap Sesa, that will be the end of the Spin project. The company has chosen to use the results to develop a "simple" agenda planning application with full speech input and output facilities for general and technical managers.

And this after the DG optimistically wrote in April 1988 that: "Starting in 1989, the [Spin] results are expected to be applied to the workstation market."

Instead, no other applications are being considered. "There's no focus on searching for any," says Boillon. He admits that there's no assurance of what will happen after September, when the project is finished. Why not create some exciting new products with the results of the project?

"First we have to optimize the hardware architecture," says Boillon. He figures this will take another couple of years of experimentation. Not surprisingly, he's very interested in receiving more EC funding for that purpose.

Actually, Cap Sesa has already submitted a proposal to continue the project, to improve the speech capacity and the robustness of the system. Requested funding: ECU 27 mn.

Not all EC language projects are disappointing. Take Eurolang, the linguistic analysis of the European languages. For ECU 4 mn the participants in this project are looking for definitions of the phonemes in all the European languages in such a manner that these definitions will be as identical as possible.

If the Eurolang researchers succeed, their results will make possible the systemization of the European languages. Also, the techniques needed to recognize and synthesize speech may thus become language independent. "A lot of dreams," says J. Roukens, but he admits that it's "worth trying," and that the project has "come a long way."

The first phase of Eurolang has been finished. A databank with phonemes is now available, and can be applied to the development of speech synthesis systems. A second phase is on its way.

One promising project, called Acord, is still running. Its participants are developing a knowledgebase that can be interrogated in natural French, German or English. The output consists of encyclopedia-like text and graphics, which the system "knows" how to select by parsing the user's sentences and creating semantic representations for them.

There're more. SIP, a six year project worth ECU 13 mn, has produced advanced algorithms and architectures for speech and image processing that, according to a manager of one of the Italian participants, have "just been transferred to our labs for inclusion in commercial equipment."

Two classes of applications are envisaged, the main one being the automation of parcel handling in postal services. The other consists of the tools needed for the development of a voice-assisted air traffic control system.According to the (anonymous) manager, the algorithms "basically work with all languages." So far, the prototype has only mastered Italian, some French and a little bit of German.

Soon this machine, and all other speech input and output systems, will be tested by another machine called Sam. Sam I en II are multi-million ECU projects for "multilingual speech input and output assessment, methodology and standardization."

In plain words: Sam is a database that can compare the sounds a machine produces with human speech, as well as judge how well a machine recognizes spoken language. Sam I started in 1987, and will have a lot to do, since the Commission has even more plans.

COMING UP

In a "Rapport de Mission" from Brussels, dated 1 February 1989, DG XIII lists nine recently proposed projects, of which four were rejected. The rejects are: Oracle, Aspire I, Siren and Aspire 2 – all projects to create speech machines.

The new projects that have been approved are: Sundial, Sunstar, Polyglot, Ars and Sam II. They're all programs for the creation of speech input, output or understanding devices, with funding of ECU 75 mn.

Bottom line: no commercially available products from EC-funded research.

ALARMING

What then is this Lingua program, which officials at the rival Directorate General XIII have already labeled "a project for the European elite?"

The first phase of the program is scheduled to start in 1990 and is destined to last five years. It has two main objectives: one, increase the ability of EC citizens to understand one another; and two, provide "the current and future labor force" with "sufficient" foreign language abilities, so that EC companies can reap the promised benefits of the unified internal market.

Practically, the Commission wants to

- promote language learning for young people through scholarships for teachers
- organize international exchanges of pupils
- finance the development of European curricula and of didactic materials, and finance the training of language assistants.
- strengthen the European university network
- grant international scholarships to students and teachers
- promote language teaching in economic life
- support educational establishments for foreign language teaching, and produce reports on the language teaching policies of the member states.

DIVERSIFICATION

All fine and good. But let's get serious. If those ECU 300 mn are supposed to promote language learning in any meaningful way, the question is *which* language or languages should be promoted? English for example, is already the most important second language within the Community and around the world, plus it is the scientific and economic lingua franca.

English, however, will not be selected for special promotion – nor will any other language. The Commission concedes "the political impossibility," as one official in Brussels frankly put it, establishing a European lingua franca. Instead, it chose to propose "an action strategy implying diversification of foreign language learning opportunities, rather than promoting one or two priority languages."

In other words, *all* Community languages should be more widely taught, according to the Commission, because of the "rich diversity of linguistic and cultural traditions in Europe." That the Community needs programs like Lingua in the first place to overcome the negative results of these traditions is conveniently ignored. With the likely result that from 1990 on, the EC will be subsidizing Danish students wanting to become German teachers, of German students who want to teach French, and of French students who want to teach Spanish.

CRITICISM

At DG XIII, the Directorate General for Information Technology, they talk derisively of Lingua. "Lingua is an excellent initiative," says Loll Rolling, head of the Computerized Language Processing Division, "but some intelligent people in the parliament have a number of criticisms."

The "criticisms" Rolling is referring to can be summarized as: "If you give the national education ministries ECU 100 mn to teach foreign languages, it's not at all evident what they'll do with it. Will they initiate *new* programs? Or will they just use the money to finance programs they'd finance anyway?"

For instance, Luxembourg is said to be very enthusiastic about Lingua. Why? "Well, as you know we have a very complex linguistic situation in our country," replies an official at the Luxembourgeois embassy in Brussels. But as we know from reading the Intro/Outro to this special Conquering 1992 issue, Luxembourg has already *solved* that situation by teaching its citizens to be bilingual (10%), trilingual (47%) or even quadrilingual (42%). So what does Luxembourg need EC funding for, aside from taking some pressure off the existing national education budget?

Another objection to Lingua is that while ECU 300 mn seems a lot of money, it really isn't – after all, tiny Holland alone spends 14 *billion* ECUs on education – and only a few thousand students can actually benefit from it. In other words, the EC might be teaching language knowledge not to Europe's labor forces, but to its education elite.

Convinced that this will be the case, DG XIII's Rolling has initiated a study to demonstrate the comparative efficiency of language teaching to what he calls the "language industries," the companies that apply high technology to processing natural language. What he hopes to prove is that while the former may be of value to the happy few, the latter will be of service to all citizens – and for less money.

Rolling argues that language teaching should be expanded for only cultural and scientific purposes – to read Rimbaud in French or a publication on nuclear fusion in English – not for a futile attempt

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at helping as many European citizens as possible overcome practical language problems. Those, he believes, will have to be conquered by the use of new technologies.

Automobile workers in Italy, for example, may receive car body assembly information partly in Italian, partly in German. Should these workers be taught everything between the German nominative and dative, just to understand: "Die Schrauben dürfen nicht zu fest angedreht werden?" (The screws must not be overtightened.)

According to Rolling it's a hundred times cheaper to *translate* all the German these Italians will ever need during their professional lives, rather than try to *teach* them German. But only if modern tools are used to do the translating. Putting someone behind a typewriter on a roof garden in the Italian sun will, pity enough, not do the trick.

DISASTER

Lingua isn't the first program launched by the Commission to solve the Community's language problems, nor are Rolling's suggestions the first proposals for hightech solutions. The Community has already spent more than ECU 15 mn on the very ambitious, seven-year-old Eurotra program. That program was supposed to result in the protoype of an advanced machine translation system for all nine languages. It hasn't yet, and it won't. Indeed, Eurotra has become something of a Commission embarassment.

On 27 February, behind closed doors, the Eurotra supervisory committee and representatives of the research ministries of all member states gathered to witness a first operational test of seven years of labor. The results? "Appalling," was the way one participant put it.

Eurotra researchers demonstrated what one of the organizers called a "a toy system," a demo that was set up to translate a few sentences from German to Danish, English, French and Spanish, as well as from Danish to German. The model was small, containing only thirty lexical entries. Theoretically there were supposed to be no limits to the length of the sentences, but since the system was regarded as slow, it was recommended to keep them within twelve words (this sentence contains 35 words).

Also, since no more than the basic grammars of the different languages were implemented, grammatical limitations were imposed, such as the need for simple affirmative sentences. In other words: no "no," "not," "never" etc., and no question marks allowed.

In other words, *all* Community languages should be more widely taught, according to the Commission, because of the "rich diversity of linguistic and cultural traditions in Europe." That the Community needs programs like Lingua in the first place to overcome the negative results of these traditions is conveniently ignored.

These restrictions were respected. Still, the machine took ten minutes to translate each previously prepared sentence – on top of which it produced a poor translation. Then, when the head of the German Eurotra group typed in an *unprepared* sentence, the system churned away fruitlessly for 45 minutes before being put out of its misery and switched off.

The reasons for Eurotra's failure are complex. One official says Eurotra's design is obsolete and causes enormous problems. Another official points out that, since the design draws on an exisiting body of knowledge, with no new elements added, Eurotra has come to be a cumbersome engineering project. An outside observer notes that the political-considerations behind Eurotra doomed it from the outset – instead of renting one office building in Brussels, filling it with computational linguists drawn from all over the community, and then giving them the brief to create a machine translator, Eurotra funded a decentralized collection of research groups in each of the 12 member countries. A close observer points out that while member countries were supposed to match EC funding with national funding, many smaller countries never did, and used Eurotra funding to support university linguistics programs rather than Eurotra.

According to Rolling, one of the biggest mistakes the Eurotra people made is that they had the national universities research the *specific* aspects of their languages, instead of searching for what these have in common. The numerous exceptions are impossible for the software to handle. "It's been an inadequate strategy, and it's too late to correct it now," he says.

In December, two months before the ill-fated demo, the European Parliament missed a golden opportunity to pull the plug on the project. Instead, it authorized another ECU 12 mn to carry Eurotra into its third stage.

Nevertheless, people within the Commission are already coming up with ideas for a post-Eurotra era. The machine translation program could be put to sleep, it is suggested, and turned into a general research program for computational linguistics. One connoisseur baptized these proposals *The Bride of Eurotra*. Rolling is more sanguine, suggesting a transition period from 1991 to 1992. If by some chance a useful prototype emerges, then they should evaluate a second machine translation program, and have a commercially viable translator in 1997. "Otherwise stop it," says Rolling. *Sans regret.*

MESSAGE

DG XIII is working on a hightech answer to Lingua and alternative to Eurotra. Right now, the DG is funding a Language Industries Survey (LIS), to inventory the companies and institutions involved in researching, developing or producing language industry products and services around the world. LIS is also supposed to have an evangelical function – to spread the word about the DG's interest in technological solutions to language problems, to inform corporate Europe of the solutions already available, and implicitly to create a language industries lobby.

What DG XIII is angling to do is create a new program for the 1990s that would overcome the practical barriers between European languages, as well as within each language, with hightech tools. The working title for its program is the melodramatic "Life" – which stands for Language Industries (or Initiatives) for Europe.

As part of its effort to inform people about, as well as build support for its activities, DG XIII has begun to organize a conference in Strasbourg on 19 and 20 June. Present at this conference will be Swiss, Canadian and Belgian officials, who have experienced language problems ever since the day they learned to talk, Commission bigwigs, invited "decision makers" from the language industries, as well as current and potential consumers of language industries products and services.

Language industries invitees will doubtless include managers from companies that produce wordprocessors, electronic publishing systems, spelling, style or grammar checkers, and machine translators. Others on the obvious guest list include developers of voice recognition or optical character recognition, researchers from the natural language understanding labs, publishers of terminology databases and CD-ROM dictionaries, managers of translation services, and what have you.

The Commission will propose a toast, and then most likely ask the gathered multitude whether it should develop any programs to encourage to the creation of new language applications. What it has in mind here are so-called "language resources" and software for handling "non-numerical" information.

The language resources include text corpuses, electronic lexica and terminology databanks, and they'll be "open to anyone." Software for handling "non-numerical" information is software that can process textual information as well as knowledge components – artificial intelligence, if you like.

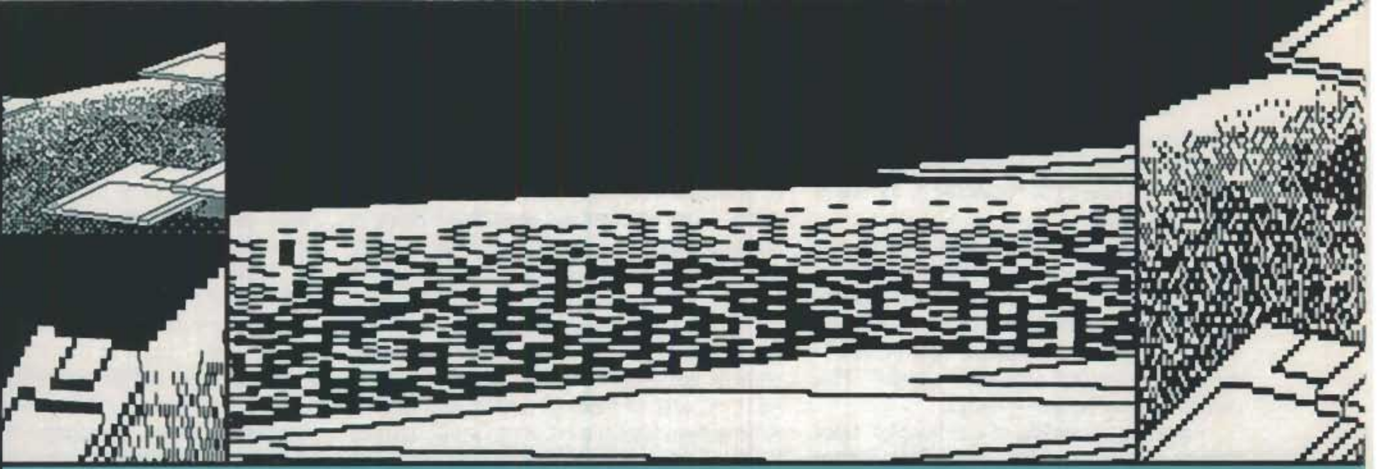
Preliminary and very unofficial Life projections to fund resources fall between ECU 100 and 150 mn. "Sixty percent of Lingua would resolve all the problems," notes Rolling dryly. Total funding is talked about as being between ECU 150 and 200 mn. Launch date: 1992, maybe even 1991.

The Life proposal is not without its critics either. Some point out that, as with Lingua, these programs might end up subsidizing projects which would be funded anyway, by large multinational computer companies in this case.

Also, Eurotra may be the most disappointing language program the Commission has been nursing, but it's not the only fiasco. In the past few years, the Community has funded a grab bag of small and medium size projects in the text and speech processing area under the Esprit program (see sidebar). Tens of millions of ECUs have been thrown at these programs.

Some of them were reasonably successful – from a scientific point of view. Some have yet to yield tangible results. Some have died slow and lingering deaths. None of them has resulted in one single product available over the counter. So, the question is whether force feeding the nascent language industries is likely to result in anything more usable than what the Esprit attempts have so far produced.

And even if these efforts did result in attractive products, there's still no assurance they'll succeed in the marketplace. As one cynical European observer put it: "The Europeans developed the compact disk, the Japanese are selling it. The Europeans developed VHS, the Japanese made the market for it. When we create language products, we'll probably need the Japanese to sell the tools that'll shape the Common Market."



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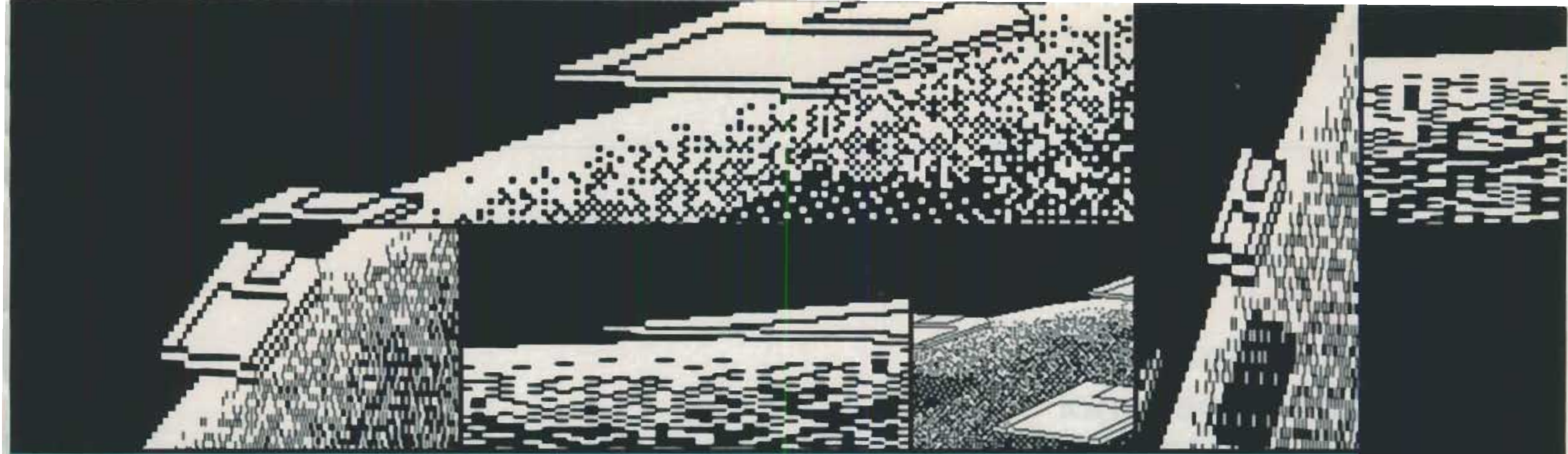

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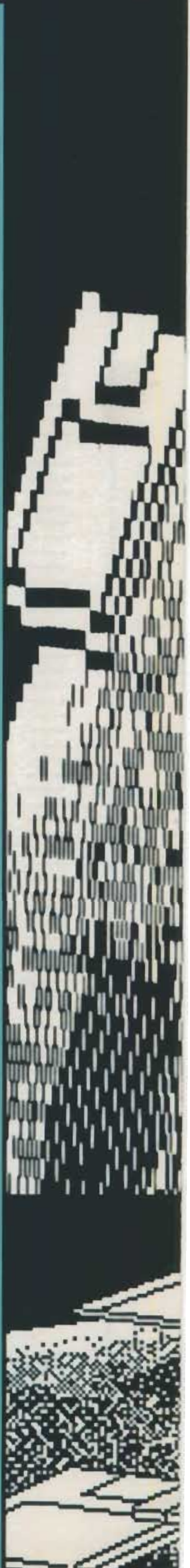

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THE
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Written and researched by Geoff Pogson

Resource Guide

EUROPE

INTRODUCTION

The brief for this, LT / Electric Word's Multilingual Resource Guide, was simple: provide a toolbox of multilingual products and services that the typical company from Abilene, Texas, Osaka, Japan or Padua, Italy can use to help it to establish a trans-European presence in anticipation of the unified market of 1992.

Unless otherwise mentioned, all products listed run on IBM PC/compatibles. Prices, unless stated otherwise, are average for Europe.

Page Contents:

2 Localized wordprocessing
Multilingual wordprocessing for the specialist
Localized DTP
Online multilingual termbanks
CD-ROM multilingual termbanks & dictionaries
3 Diskette-based multilingual dictionaries
Multilingual correspondence software
Terminology management Software
Computer-aided translation (CAT)
Machine translation
4 Multilingual OCR software
Miscellaneous gizmos
Translation/documentation companies

LOCALIZED WORD-PROCESSING

The ability to handle the full range of characters and accents used in all West European languages is a feature we've come to expect from top flight American writing packages. And with reason. If they couldn't generate ***ß, ñ, ä, í, ë, ø, å*** *and all those other typographic Euro-quirks, we might as well go back to using golfball typewriters, n'est-ce pas?*

In addition, some wp market leaders are published in "localized" versions: with documentation, screen messages, spellchecking, hyphenation and – in some cases – thesauri, produced in "national" languages.

Here's a handful of the most extensively localized American wp and dtp market leaders:

WordPerfect

WordPerfect Corp., 1555 North Technology Way, Orem, UT 84057, USA. Tel: +1 (801) 225 5000

WordPerfect updates for the PC are regularly localized in 13 non-American versions: Danish, Dutch, Finnish, French, German, Icelandic, Italian, Norwegian, Portuguese, Spanish, Swedish, UK English and Canadian French. There is no Greek version, but in WordPerfect's latest standard version, 5.0, the keyboard can be remapped to generate all Greek characters.

All localized versions have their own spellcheckers. And thesaurus modules are so far available for Dutch, German, Norwegian, Spanish, French and Swedish.

Hyphenation modules are available for all languages and come in two types. Those for US and UK English are based on wordlists – thereby guaranteeing 100% accuracy. For all other languages, hyphenation is generated by algorithms that implement appropriate graphological rules – less RAM-hungry than wordlists but also less accurate. All the same, WordPerfect claims an average 95% success rate for its algorithmic hyphenation routines.

WordPerfect 5.0's average European prices: between $570 and $750.

MULTILINGUAL WORD-PROCESSING FOR THE SPECIALIST

If you're in the business of composing documents containing more than one language or script – from tourist guidebooks to the public information brochures produced by any large European municipality – take your pick from these multilingual wordprocessors:

NotaBene

Dragonfly Software Corp., 285 West Broadway, Suite 500, New York, NY 10013-2204, USA. Tel: +1 (212) 334 0445

Admirers call it the *crème de la crème* of PC wordprocessors. No localized versions exist, so spellchecking, synonym-hunting and hyphenation are only possible for English.

However, NotaBene's Special Language Supplement is truly multilingual and multiscript. It includes all West European and Slavic accents and scripts, ancient and modern Greek and Hebrew (with reverse wordwrap, of course), and transliterated Asian languages – all of which can be integrated in the same document.

US price: $495.

Multilingual Scholar / Polyglotte

Gamma Productions Inc., 710 Wilshire Blvd., Ste. 609, Santa Monica, CA 90401, USA. Tel: +1 (213) 394 8622

ICGE SA, 27 rue Candacérès, 75008 Paris, France. Tel: +33 (1) 42 65 49 69

Multilingual Scholar (in France called Polyglotte) is put out in three versions – English, French and German – all identical except for documentation and screen messages. It comes with six alphabets – Roman (all West European accents and characters), Cyrillic, Greek and Hebrew (both ancient and modern), and Arabic – all of which can be integrated into one document. Prices: $1,234 for dot matrix, $1,547 for laser printers.

Optional spellchecking modules for all nine EC languages plus Russian are available for $312 each, as are modular fonts for Thai, Vietnamese, Devanagari, Korean, Armenian, Ethiopian, Farsi, the International Phonetic Alphabet, math symbols and

LOCALIZED DTP

Essential to good localized DTP is good hyphenation. Otherwise, look for what you'd expect in localized wordprocessing – with the exception of spellchecking and thesauri, both still unusual in DTP. Here are the market leaders:

PageMaker

Aldus Corp., 411 First Avenue South, Seattle, WA 98104, USA. Tel: +1 (206) 622 5500

PageMaker for the PC/Mac comes in both US and "International" English versions. No spellchecking. American hyphenation is algorithmic, whereas the International's is wordlist-based.

In addition, PageMaker comes in 10 foreign-language versions: all the EC languages (except Greek), Norwegian, Finnish and Kanji. Plans for a Greek version are afoot.

Prices: for the Mac, $925; for the PC, $1,012.

Ventura

Xerox Desktop Software, 9745 Business Park Ave., San Diego, CA 92131, USA Tel: +1 (619) 695 7891

Localized versions of Ventura are available for UK English, French, German, Italian, Dutch, Spanish, Portuguese, Swedish, Danish, Norwegian, Finnish and Hungarian. No spellchecking. Hyphenation is all algorithm-based, but each version also has an exception dictionary to which words can be added. $1,350.

XPress

Quark Inc., 2525 West Evans, Denver, CO 80219, USA. Tel: +1 (303) 934 2211

XPress for the Mac has been localized for French, Italian, Dutch, Spanish, German, Kanji, Korean, Swedish and Norwegian. Greek is planned, and Portuguese and Danish are being thought about. At present, spellchecking is for English only, but it's being worked on for the rest. Algorithmic hyphenation is available for all languages. $1,180.

ONLINE MULTILINGUAL TERMBANKS

The thorniest language problem facing multilingual wordworkers – especially those working in a variety of domains – is that of specialist terminology. The constant stream of new coinages and the pressure of international standardization place terminology, along with teenage slang, among language's most perceptibly fickle aspects.

Terminology lists or "termbanks" – mostly mono- but some multilingual – are now commonly available from datacoms service suppliers. And many wordworkers are discovering how going online can be both faster and cheaper than trekking to the nearest reference library for the most obscure information.

However, skepticism about both the breadth and quality of online termbanks still prevails. Their biggest problem: so few institutions and companies are willing to make their terminology freely available on public networks.

Three multilingual online termbanks consulted by translators are:

Eurodicautom

European Commission Host Organization (ECHO), 177 Route d'Esch, 1471 Luxembourg, Grand Duchy of Luxembourg. Tel: + 352 48 80 41

Produced by the European Commission, Eurodicautom contains 380,000 scientific/technical terms and contextual phrases, and 90,000 abbreviations in all the official EC languages except Greek. It is updated monthly with about 2,000 new items, mostly before they are available in printed form.

Eurodicautom is available free of charge via public packet switching networks. A free user manual is also available from ECHO.

Normaterm

Afnor, Tour Europe, 18 place Carolle, 92080 Paris La Défense Cédex 7, France. Tel: +33 (1) 42 91 55 55

Produced by Afnor, the French standards organization, Normaterm contains 90,000

CD-ROM MULTILINGUAL TERMBANKS & DICTIONARIES

With its massive storage capacity and compact proportions, CD-ROM makes a dapper electronic reference medium. Yet in its first four years, it's been sluggish taking off – perhaps owing to the sparsity of quality titles. However, the number of CD-ROM products is slowly rising, a good number of them bi- and multilingual. With the products mentioned here, memory resident retrieval software allows direct copy and paste into your wp document:

Harrap's Multilingual Dictionary

Microinfo Ltd., P.O. Box 3, Omega Park, Alton, Hants GU34 2PG, UK. Tel: +44 (420) 868 48

Instant access to five million words in eight languages. Cross-referencing between 13 large dictionaries featuring English, German, Spanish, French, Dutch, Italian, Japanese and Chinese. Price: $1,012 (reduced to $586 "for a limited period only").

Swedish, Danish, Norwegian and Finnish are due to be added to a new edition out this winter.

Termdok

Walters Lexicon Co., Södermalmstorg 8, 17800 Stockholm, Sweden. Tel: +46 (8) 261 470

75,000 Swedish, Norwegian and Finnish terms with translations into English, French, German, Spanish and Russian. Subjects include all technical fields. In addition, 100,000 terms with definitions and contexts from Termium (see above) and 40,000 terms from Normaterm (also see above). $922.

Facts on File Visual Dictionary

Facts On File Ltd., Collins St., Oxford OX4 1XJ, UK. Tel: +44 (865) 728 399

Designed primarily for language teaching, this prototype has the potential, given more entries, to be useful to multilingual wordworkers. It combines text, audio and images, allowing you to quickly find the right word, picture and pronunciation for an object. It still only includes 10,000 entries and

WordStar

MicroPro International, 33 San Pablo Ave., San Rafael, CA 94903, USA. Tel: +1 (415) 499 1200

Various versions of WordStar are localized for UK English, German, Italian, Spanish, Brazilian (but not metropolitan) Portuguese, Hungarian, Danish, Dutch, Finnish, Swedish and Norwegian. They all have spellcheckers and algorithmic hyphenation, but only UK English and German have thesauri. Europrices: $790 for the 2000 Plus 3.0, and $680 for the Professional version 5.

In addition, most localized WordStar versions support more than one language. German WordStar Professional, for instance, includes spelling and hyphenation for both English and French.

In winter 1989, a new international WordStar 5 will be launched on the European market to replace WordStar Professional, and allow full multilingual editing. It will include hyphenation for the five major European languages – English, French, German, Spanish, and Italian – each accessible through a hot key. In addition, spellchecking modules will be available for individual languages, costing about $25 each.

VolksWriter

Lifetree Software, Inc., 411 Pacific Street, Monterey, CA 93940, USA Tel: +1 (408) 373 4718

Much-vaunted VolksWriter 4.0 – with grammar checking from Houghton Mifflin (See review LT 13, p.59) – will not be marketed in Europe. Instead, this summer, VolksWriter 3.0 for the PC is to be upgraded to 3.2 in four localized versions: UK English, French, German, and Dutch, each with spellchecking and algorithmic hyphenation.

Spanish, Italian and Scandinavian will follow later, along with low-cost modular spelling and hyphenation for all European languages, thereby allowing the full editing of various European languages in the same document. $340.

Lifetree's more elaborate Total Word wp package ($680) will be localized later.

Microsoft Word

Microsoft Corp.,16011 NE 36th Way, Box 97017, Redmond, WA 98073-9717, USA. Tel: +1 (206) 882 8080

Word (for Mac and PC) is localized for UK English, French, German, Spanish, Portuguese, Dutch, Italian, Swedish and Danish. Spellchecking and hyphenation are included for each. $670.

braille. A similarly priced utility for creating your own fonts, keyboard maps, and contextual rules is also available.

VuWriter

Vuman Computer Systems Ltd., Enterprise House, Lloyd Street North, Manchester M15 4EN, UK. Tel: +44 (61) 226 8311

Vuman's top-of-the-range VuWriter Language Master Professional supports Roman (all West European characters and accents) Cyrillic (Bulgarian, Russian, Serbo-Croat, Ukrainian) and Greek.

There is a sister Scientific Professional product, whose formulas etc. can be integrated into Language Master documents. Vuman also produces link modules – Link Packs – to export files to Ventura and PageMaker.

VuWriter Language Master Professional costs $1,011. Link Packs: $246 each.

WordMARC Composer + Professional

MARC Software International Inc., 260 Sheridan Ave., Palo Alto, CA 94306, USA. Tel: +1 (415) 326 1971

Produced for a variety of systems, from PCs through UNIX machines to mainframes, WordMARC is localized for 15 languages, including the EC nine, the Scandinavians, and Swiss German.

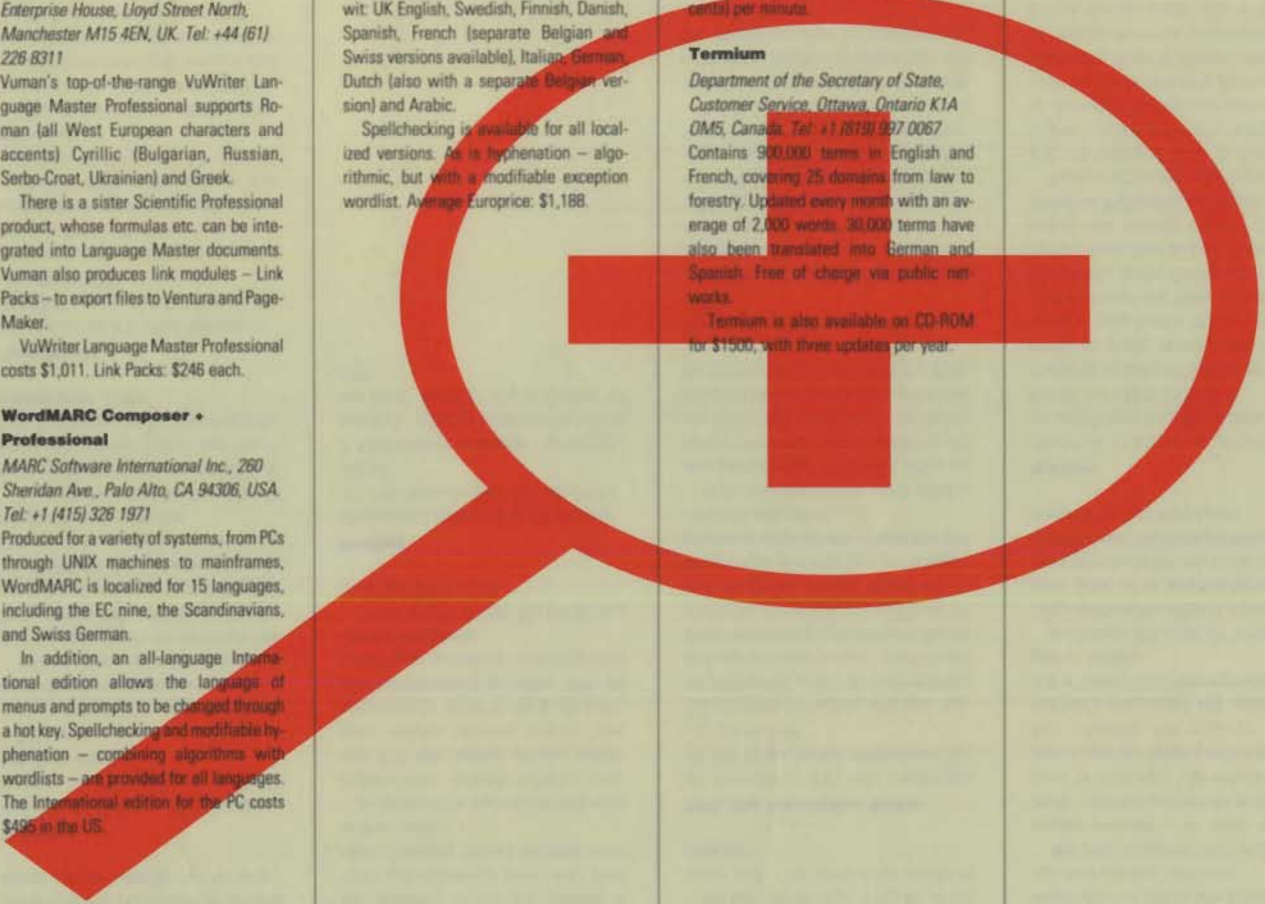
In addition, an all-language International edition allows the language of menus and prompts to be changed through a hot key. Spellchecking and modifiable hyphenation – combining algorithms with wordlists – are provided for all languages. The International edition for the PC costs $495 in the US.

ReadySetGo

Letraset Corp., 40 Eisenhower Drive, Paramus, NJ 07653, USA. Tel: +1 (201) 845 6100

Letraset's ReadySetGo for the Mac comes in 10 languages other than US English. To wit: UK English, Swedish, Finnish, Danish, Spanish, French (separate Belgian and Swiss versions available), Italian, German, Dutch (also with a separate Belgian version) and Arabic.

Spellchecking is available for all localized versions. As is hyphenation – algorithmic, but with a modifiable exception wordlist. Average Europrice: $1,188.



terms from many technical domains including textiles and agriculture, all in both English and French.

Normaterm is available in France on Minitel, the French videotex system (access code: 36 17) costing FF2.19 (34 US cents) per minute.

Termium

Department of the Secretary of State, Customer Service, Ottawa, Ontario K1A 0M5, Canada. Tel: +1 (819) 997 0067

Contains 900,000 terms in English and French, covering 25 domains from law to forestry. Updated every month with an average of 2,000 words. 30,000 terms have also been translated into German and Spanish. Free of charge via public networks.

Termium is also available on CD-ROM for $1500, with three updates per year.

600 onscreen pictures. English-French, English-German, and English-Spanish, with other languages in preparation. Expected for release in 1990. No price yet.

DISKETTE-BASED MULTILINGUAL DICTIONARIES

As yet, bilingual dictionaries on disk are of limited use to the practiced multilingual wordworker. Their relatively modest storage capacity restricts them to the size of, say, a medium-sized office dictionary. However, even old hands occasionally need a memory jolt. And if the retrieval software is any good, electronic access is much faster than leafing through paper.

The products below all have RAM-resident retrieval software, allowing copy and paste directly into your wp document:

Collins Online

Collins Publishers, PO Box, Glasgow G4 0NB. Tel: +44 (41) 772 3200

Non-modifiable bilingual English dictionaries for French, German, Italian and Spanish. In addition, French-German and French-Spanish, both two-way. Price: $220 for the pop-up engine and a one-way dictionary, plus an additional $155 for each additional dictionary. A CD-ROM compendium of the whole suite of Collins dictionaries is planned for winter 1990.

MultiTrans

Linguistic Systems BV, Keizer Karelplein 32-B, 6511 NH Nijmegen, Netherlands. Tel: +31 (80) 226 302

A non-modifiable multilingual dictionary and thesaurus to be launched in the summer of '89. Five languages: English, French, Spanish, German, and Dutch. Six more in preparation: Italian, Japanese, and the Scandinavians.

MultiTrans will be available in two forms: either as a complete "professional" version, allowing cross-referencing among all 20 language pairs; or as one-language-pair "consumer" modules. The former will sell for between $1500 and $2000, the latter for about $200.

INK Library Of Dictionaries

Ink International BV., PO Box 5477, 1007 AL Amsterdam, Netherlands. Tel: +33 (20) 664 6361

In total, 56 specialist bilingual dictionaries

MULTILINGUAL CORRES-PONDENCE SOFTWARE

The last two years have seen the arrival of a number of packages designed to translate your business letters. Simpler than you might expect, they basically consist of large user-modifiable multilingual databases containing phrases and clauses commonly used in commercial correspondence – with parameters for such variables as names, dates, sizes and prices – plus look-up and copy-and-paste facilities.

As well as doing (some of) the work for you, these products make excellent teaching tools – not so much for beginners but rather for export managers and secretaries whose foreign language skills have gone rusty.

Caution: a little knowledge is a dangerous thing. In any case, whoever's let loose on these products should at least have enough knowledge of the language they're generating to be able to make any necessary modifications – quite aside from any considerations about the desirability of being able to understand what you're putting your signature to:

Correspondance

A Propos, 62 blvd. Richard Lenoir, 75011 Paris, France. Tel: +33 (1) 47 00 06 75

Correspondance offers 700 phrases and sentences in three languages: French, English, and German. As you key in your source language text, you see it gradually build up – either in one or both target languages – in windows on the screen. For the Mac. Price: $416.

LinguaWrite

MultiLingua, 61 Chiswick Staithe, Harrington Road, London W4 3TP, UK. Tel: +44 (1) 995 0478

Originally based on the Pan/Macmillan Multilingual Business Handbook, LinguaWrite boasts five languages – English, French, German, Spanish and Italian – and a database of 2000 phrases and sentences. Screen menus and messages are also multilingual and can be changed at a keystroke into any one of the five languages. $340.

TERMINOLOGY MANAGEMENT SOFTWARE

This is the type of software that allows translators to do what they used to do with their vocab books and index file cards. In other words: build their own bi- or multilingual glossaries – general, domain-specific or company-specific. Cleaner, faster to access, and more flexible than file cards:

Superlex

Chris Blowers Software and Translation, Hauptstr. 79, 7155 Oppenweiler, FRG. Tel: +49 (7191) 448 13

A RAM-resident glossary package whose entries can be looked up, copied and pasted within almost any wp program.

You can create up to ten dictionaries, each of which supports one source and four corresponding target languages. The dictionaries can in turn each be subdivided into nine 66,000-entry glossaries, thus enabling you to create separate wordlists for different clients or domains.

The company is itself developing ready-made wordlists to get you started. Language pairs: German-English and French-English, with plans for Dutch and the Scandinavian group. $340.

TermTracer

Ink International B.V., Prins Hendriklaan 52,1075 BE Amsterdam, Netherlands. Tel: +31 (20) 664 63 61

TermTracer lets you create any number of your own dictionaries, look-up entries, and copy and paste. It comes supplied with one ready-made bilingual dictionary of your choice from the INK Library of Dictionaries (see above).

Extra utilities let you use key combinations to move from dictionary to dictionary, compare dictionaries, and enhance your keyboard with maths symbols, language-specific characters and accents. $216.

INK Text Tools

Ink International B.V., Prins Hendriklaan 52,1075 BE Amsterdam, Netherlands. Tel: +31 (20) 664 63 61

Similar to TermTracer (see above) – but

Aquila

SITE, 11 avenue Morane Saulnier, BP 189, 78143 Vélizy Villacoublay, France. Tel: +33 (1) 30 70 16 16

A Windows-compatible terminology package consisting of one large glossary in which you encode your terms under three types of category: domain, economic activity and company.

It comes with a ready-made 7000-entry English-French scientific/technical glossary. SITE also supplies glossary supplement modules, covering domains from aeronautics to dataprocessing, and petroleum to mechanical engineering. Some are just bilingual, and some four-language with Spanish and German.

Aquila sells for $1,395. The dictionaries range from $18 to $175.

Profilex

Datentechnik Horst Gabriel, Zügelstraße 26, 7100 Heilbronn, FRG. Tel: +49 (7131) 520 98

A RAM-resident modifiable "terminology databank," allowing instant retrieval, copy and paste. Available only in German for $658.

COMPUTER-AIDED TRANSLATION (CAT)

The borderline between terminology management and machine translation. Or to put it another way: as you erect the edifice of your translation, these products will stack any number of bricks – words and phrases – but you provide most, if not all, of the clever stuff – the grammatical cement in between:

TED, the Translation Editor

Ink International B.V., Prins Hendriklaan 52,1075 BE Amsterdam, Netherlands. Tel: +31 (20) 64 63 61

TED combines text editing with term look-up and copy-and-paste, "putting everything you need onto your screen," which is split into three horizontal compartments: the top one for the source text; the middle one for your translation; and the bottom one for target language entries from your bilingual glossaries, automatically compiled by INK TextTools (see above).

In the top compartment, words listed in your glossaries are highlighted, while the bottom one displays their equivalents. As you key in your translation in the middle compartment, you can paste in terms from the bottom one using a function key. $568.

Translation Support Systems (TSS)

ALPNET Inc., 190 West 800 North, Provo, UT 84604, USA. Tel: +1 (801) 375 0090

A package with two alternative levels: AutoTerm and TransActive. Both work with screens split three ways: a window for your source text, one for target equivalents of its terms, and one for your actual translation.

AutoTerm is similar to TED (see above). It simply cranks out equivalents for individual words or phrases and pastes them into your translation, while you supply the syntax.

TransActive goes further. It dabbles in grammar, in that it attempts to translate your source text clause by clause. And like a cat with a dead bird, it presents you with its effort for approval. (hence the name "interactive CAT?")

MACHINE TRANSLATION

If your translation load amounts to big wads of repetitive technical language – or for that matter any sort of language as long as it's semantically transparent, free of implied meanings and leaves nothing to the imagination – it may be time to start thinking about machine translation.

Not that computers that crunch languages overnight – or "work in batch mode" – will free you from the troublesome need for hired help. Your translators will become glossary builders and bilingual editors, checking the accuracy of the machine's raw output and smoothening out, or "postediting" the rough edges of its gauche literality.

Commercial MT is not yet "intelligent," but given the right conditions, it gets the job done. Some of its hard-headed business users liken its significance to the invention of sliced bread. Claims for productivity rises rarely fall short of 100 percent:

Systran

Gachot SA, 26 bis, avenue de Paris, BP 14, 95230 Soisy-sous-Montmorency, France. Tel: +33 (1) 39 89 90 11

A mainframe-based MT system, accessible online on public packet switching networks. A large number of language pairs: English into all the West European languages plus Arabic; German into English, French, Italian and Spanish; French into English and German; Russian, Spanish, Italian and Portuguese into English.

Systran has two types of dictionary: general, the largest of which is Russian-to-English with 500,000 entries; and specialist, covering 30 domains from electronics to medicine. Gachot SA claims accuracy rates of between 70 and 95 percent – depending on language pairs – on non-pre-edited text and an average output rate of 800,000 words per hour.

In France, Systran is available for short texts on Minitel - at an average cost of FF1.50 (25 US cents) per minute. For longer texts – costing 30 centimes (4.5 US cents) per word – you need a PC with 512 Kb of from and into English, French, German, Dutch, Italian and Spanish.

"INK's Own Dictionaries" cover two domains: business and computer technology. Each has approximately 4,500 entries and costs $64.

Three further dictionaries – covering medicine, law and economics – were developed jointly with Holland's prestigious Van Dale dictionary publisher. These contain between 3,400 and 7,500 entries and sell for between $57 and $84.

The dictionaries are designed for access through TermTracer's retrieval and copy-and-paste software (see below).

Tick-Tack

Primrose Publishing (Cambridge),
Vicarage Long Barn, Denham, Bury St.
Edmonds, Suffolk, IP29 5EF, UK. Tel: +44
(284) 811 185

Tick-Tack is both a multilingual word-processor and correspondence database. The basic version comes with a 500-entry bilingual database, or "sentence building block library," and costs $500.

Tick-Tack is available in any combination of all the official EC languages, plus Swedish, Norwegian and Finnish, Welsh and Scots Gaelic, Basque and Catalan, Russian and Polish, Pinyin Chinese, Turkish, and Indonesian. For a third language or more, modules are available at $160 each.

An education version called Pen-Friend, with a general rather than business vocabulary, is sold for $375.

Incidentally, British Telecom used Tick-Tack's building blocks to develop its not-very-intelligent telephone interpreter.

more. What TextTools offers translators in addition to glossary-building, entry retrieval, and copy and paste, is the ability to analyze their source text. That is: TextTools will produce a summary of a text's words and phrases and highlight those already listed in up to three glossaries.

The next step is for you to add unlisted terms to those glossaries, of which TextTools supports three types: domain-specific (such as those in the INK Library of Dictionaries – see above), project-specific, and document-specific.

The tricky thing about text analysis, though, is that, to be efficient, it requires the reduction of inflected words to their root forms. Without such "morphological reduction," differently inflected occurrences of the same word would be listed separately: a big waste of time and memory.

This makes TextTools language-dependent – and so far, morphological reduction is only available for English. However, a new multilingual version of TextTools, just out, provides "noise lists" – or glossaries of frequent words *not* to be analyzed – for six languages: English, French, German, Dutch, Italian and Spanish.

Prices. Standard version: $636. Multilingual version: $909.

MTX (formerly Mercury/Termex)

LIS Inc., PO Box 705, Berea, OH 44017,
USA. Tel: +1 (216) 234 6345
Eurolux SA, 11 rue de Wormeldange,
6180 Gonderange, Grand Duchy of
Luxembourg. Tel: +352 789 443

This RAM-resident "lexical data manager," developed by LinguaTech International (Provo, UT, USA), lets you input terms into self-defined glossaries, cross-reference between them, and copy and paste into virtually any wp document.

Ready-made modifiable glossaries are available, covering various domains including data processing, economics, trade and law, and varying in size between 15 and 60,000 entries. You can buy them in either two- or four-language combinations of English, French, German, Spanish and Dutch. Since MTX is the look-up engine used by Collins, the Collins Online dictionaries (see above) can also be integrated.

Japanese and other Asian-language versions of MTX are planned. MTX sells for $405. The glossaries cost between $152 and $228.

TSS supports three types of modifiable dictionary: general, industry-specific and company-specific. User entry is "easy as pie," says ALPNET. Language pairs developed include combinations of English, French, Italian, German and Spanish.

ALPNET sells site licenses for its products. AutoTerm: $48,400. TransActive: $63,600. One site license is valid for up to five workstations.

Interdoc

Syntec Systemhaus AG, Schelmenwasen-
str. 39, 7000 Stuttgart 80, FRG. Tel. +49
(711) 715 060

Short for Integrated Terminology and Document Control System, Interdoc includes the management of large multilingual terminology databanks, with sophisticated retrieval and paste, highly suitable for translators working on mini- and mainframe-based networks in large organizations. Interdoc's basic price is $18,180. Training and service come extra.

RAM, a modem, and a copy of Systran's access software, which costs $190.

Logos

Logos Corp., One Dedham Place, Dedham,
MA 02026, USA. Tel: +1 (617) 326 7600
Logos Deutschland GmbH, Lyoner Str. 11,
6000 Frankfurt 71, FRG. Tel: +49 (69) 666
6950

Logos is a mini- and mainframe-based package currently available for German-to-English, German-to-French, English-to-French and English-to-Spanish. German-to-Italian is in preparation.

Logos's largest dictionary, German-to-English, has 130,000 entries including inflections. In addition, about 250 modifiable specialist dictionaries are available, which will yield an accuracy rate of from 80 to 90%. Pre-editing is desirable but not required.

The output rate is "up to 200 words per hour." Hardware: IBM MVS and VM/CMS, Wang VS, UNIX series 5000. Price: from $3158. Training and support are available.

Tovna MTS

Tovna Translation Machines Ltd., CIBC
Building, Cottons Lane, London SE1 2QI,
UK. Tel: +44 (1) 234 6633/4/5

Workstation-based MTS runs in batch mode and can be accessed either by a single user or via a network. Two-way English-French is now available, with two-way English-Russian in preparation.

General dictionaries contain an average 20,000 root entries. Modifiable specialist dictionaries are also available. Entering new words is simplified through a menu-driven interface and the automatic generation of inflections.

Training and support are available both in Europe and North America. Optimum results are achieved after six months of learning by both the operator and the machine.

Average output: two to three minutes per 200 words. Hardware: UNIX-based Sun Microsystem with 4 Mb of RAM and a 300 Mb harddisk. Price: from $3000 per month for a five-year contract.

Metal

Siemens AG, Otto-Hahn-Ring, 6000
München 83, FRG. Tel: +49 (89) 636 470 72

A standalone batch system written in the LISP AI language, based on two minicomputers: the Sinix MX2 (or larger) and the Symbolics 3610 (or larger).

One language pair – German to English –

is commercially available. English-to-German, French-to-Dutch, and further combinations of English, German, Spanish, French and Dutch are all under development.

Metal comes with three dictionaries: one for the functional wordclasses – pronouns, prepositions and conjunctions; a modifiable one for nouns, verbs and adjectives; and a general technical dictionary, also modifiable. In addition, up to 1,000 user glossaries can be built.

One unique aspect of Metal is that the translated text can retain the format of the source text, including flowcharts and diagrams. Average output: 5,000 words per hour.

Metal is aimed at large users. Price: $131,500 for a multiuser hardware-software system with five workstations.

TWP

Globalink, 9990 Lee Highway, Ste. 550, Fairfax, VA 22030, USA. Tel: +1 (703) 359 6270

PC-based TWP runs interactively (with a split screen) or in batch mode. Language pairs: Spanish-English and English-French, both two ways. One-way German, Russian, Italian and Chinese – all into English – are in preparation.

Dictionaries have 25,000 entries. Words can be added, changed or deleted at will. Specialist law, business and finance dictionaries are currently available, and others are in preparation.

Globalink claims an accuracy rate of 75%. Minimum hardware requirement: standard PC with 20 Mb harddisk. Output on an IBM 386: 300 to 400 words per minute. Price: $2000 per direction.

PC Translator

Linguistic Products, P.O. Box 8263, The Woodlands, TX 77387, USA. Tel: +1 (713) 363 9154

PC Translator offers two-way Spanish-English, and one-way French-English. In addition, Danish and Swedish into English will prices range between $1400 and $2250.

MULTILINGUAL OCR SOFTWARE

To be up to multilingual snuff, OCR software has got to recognize all West European characters and accents. In addition, it should be able to handle a variety of typefaces and fonts, or at least allow you to "teach" it new ones.

Some of the packages mentioned here are also pretrained to scan the Greek and Cyrillic alphabets. But Arabic, Chinese, Japanese and Korean are still beyond almost all of them.

The best OCR packages are "intelligent," implying that, in cases of doubt, they can deduce the identity of a word from its context, using a glossary containing syntactic – that is word order – information for all words.

TextPert

Ciencia i Tecnologia Aplicada SA, Roger de Lluria #50 ent., 08009 Barcelona, Spain. Tel. +34 (3) 318 4737

As well as all West European characters and accents, TextPert recognizes hyphens and multiple fonts from 4 to 36 points. It boasts an accuracy rate of 99.5 percent and reads at between 4500 to 5000 characters per minute.

TextPert runs on a Mac and requires 1 Mb of RAM. It is compatible with most major scanners. $995.

ReadStar

Inovatic SA, 3 ave. du Centre, 78182 St. Quentin en Yvelines, France. Tel: +33 (1) 30 57 22 11

Four versions are available, three trainable and one fully automatic.

ReadStar D only handles typewritten documents and costs $780, both for the Mac and the PC. ReadStar II+ will scan both typewritten and typeset documents, and costs $3,125 for the Mac and $4,680 for the PC. ReadStar III+ (for the PC only) can read columns, skip graphics, landscape formats, and sells for $6,250.

The fully automatic one, ReadStar Express, is described as "omniscient" – it's pretrained to recognize all West European

International CorrectScan

Houghton Mifflin Corp., Beacon St., Boston, MA 02108, USA. Tel: +1 (617) 725 5000

Book publisher and linguistic software developer Houghton Mifflin offers ICScan. Not as an end product, but to OEMs as an intelligent – and multilingual – backup to their OCR ware. A logical step-up from spellchecking.

Houghton Mifflin claims that ICScan can be integrated into practically any OCR package. It's already been developed for US and UK English, German, French, Dutch and Swedish – with Spanish and Italian under development.

MISCELLA-NEOUS GIZMOS

Assorted miniaturized frippery. As these things stand, they may make nice toys, but they're of no use professionally – at least not yet. However, as chip capacity increases, it may not be long before conference interpreters are using handheld dictionaries for keystroke reminders of recently learnt terms and abbreviations:

Lyle Stuart's Concise Dictionary of 26 Languages in Simultaneous Translation

Inductel Corp., 18661 McCoy Ave., Saratoga, CA 95070, USA. Tel: +1 (408) 866 8016

This diskette-based multilingual dictionary for the PC contains 1000 common English terms, translated into 25 languages. It's not modifiable and only integratable with wordprocessors within such compatible windowing programs as DESQview 2.0 or Software Carousel. On your laptop's harddisk, you could turn it into a phrase book. US price: $49.95

The Voice

Advanced Products and Technologies Inc., 15444 N.E. 95th St., Redmond, WA 98052, USA. Tel: +1 (206) 883 8297

A handheld computer containing proprietary software that you talk to (no keyboard). Four application cartridges for translation – from English into French, Spanish, German and Italian.

The Voice also has a voice-driven calculator and offers an appointments calendar cartridge that will display the address and phone number of someone's name when spoken aloud.

First language pair for release in June '89: Spanish-English, with 35,000 entry-phrases each up to five words long. French, Japanese, German and Italian will follow. Price in the US: $2,000 plus $300 per language cartridge.

Alpha 40 Wörterbuch-Computer

Langenscheidt KG, Neusserstr. 3, 8000

TRANSLATION/ DOCUMENTATION COMPANIES

Traditionally, self-employed translators have obtained most of their work from agencies that do no more for their 40-odd percent than find horses for courses. The result: no feedback, no control, and a lot of really bad translation. Hence the big success story of the 80's: the translation service company – with salaried translators – that guarantee high quality. Companies such as Lexitech, Alpnet and Ink have dragged the translation industry out of the cottage and given it a professional face.

Mentioned here are just a handful of the increasing number of companies that ensure quality control through systematic revision and proofreading. Typically, most now also concern themselves with the production side – especially desktop publishing. And many engage in related activities such as technical writing, product localization and linguistic software development:

Alpnet

15-19 Kingsway, London WC2B 6UU, UK. Tel: +44 (1) 240 5361

Loss-making linguistic software developer turned profitable translation company, Salt Lake City-based Alpnet has offices in Canada, the Far East and Europe – of which eight are in the UK, two in West Germany, two in Spain, one in France, and one in Switzerland. Alpnet employs 80 fulltime European translators and uses its own CAT software (see TSS above). Other activities: interpreting, audio-conferencing, dtp, typesetting and printing.

Berlitz Translations

ave. Louise 306, 1050 Brussels, Belgium. Tel: +32 (2) 513 9274

American-owned. European offices in London, Manchester, Birmingham, Leeds, Edinburgh, Vienna, Paris, Frankfurt, Milan, Copenhagen, Madrid and Basel. All translators are freelance. All work is revised at least once. Other activities: copywriting, editing, interpreting, video voiceovers and audiotape recording, subtitling and transcription.

Lexitech International Documentation Network Inc.

Chaussée St. Pierre 119-121, 1040 Brussels, Belgium. Tel: +32 (2) 640 0385

One of the world's largest translation networks, with headquarters in Oyster Bay (NY, USA), Lexitech has European offices in Barcelona, Brussels, Gothenburg, London, Milan, Munich, Paris and Utrecht, and a total of 25 fulltime and 3000 freelance European translators. On top of which, Lexitech is now entering the software market: together with LinguaTech (Provo, UT, USA; see MTX above), the company is developing a terminology management package called Lexiterm.

Mendez Translation Service SA

ave. Franklin D. Roosevelt 8, 1050 Brussels, Belgium. Tel: +32 (2) 647 2700

One branch office in Düsseldorf, three fulltimers and about 200 specialist freelancers. All work goes through at least two pairs of hands. Mendez offers a full typesetting and printing service, which now accounts for about 70 percent of its output.

Soget SRL

Via Alberti 4, 20149 Milan, Italy. Tel: +39 (2) 34 24 67

Subsidiaries in Turin, Genoa, Padua and Rome. Associated offices in Beijing, Moscow and Caracas (Venezuela). Soget employs about 50 fulltime translators, all of whom are given several months' training inhouse. 80 percent of output is dtp'ed. Other activities: interpreting, dubbing, subtitling, technical writing – in fact, "anything to do with documentation, either spoken or written."

Tek Translation Ltd

11 Uxbridge Road, London W12 8LH, UK. Tel: +44 (1) 749 3211

Tek also has offices in Paris and New York, and plans new ones in Madrid and Stuttgart. It employs 50 fulltime translators, mainly native-speaking specialists.

soon be available. 80-percent dictionary-based, it's a highly transparent and flexible package. Dictionaries are modifiable. Minimum hardware: PC XT with 512 Kb of RAM, 2 Mb harddisk. Prices: $985 per direction; $1485 for any two. CD-ROM versions are planned.

characters and accents. And it's intelligent in that it includes context-sensitive glossaries for French, English, German, Italian and Spanish – with the Scandinavian group in preparation. Price: $15,546.

Autoread

ISTC, 3 rue Sainte Félicité, 75015 Paris, France. Tel +33 (1) 45 32 80 01

Comes for three environments: MS DOS (one product), Windows (four products), and the Mac (two products). DOS and Windows products will run with 20 different scanners; the top-end Mac product – Autoread Mac MLS – runs with four.

All products can be trained to read all West European characters and accents, a variety of fonts and point sizes between five and 25. Context-sensitive glossaries can be integrated.

Memory requirements: for DOS and Windows 640 Kb, for the Mac 2 Mb. Speeds range from 100 to 150 characters per second, and prices from $960 to $3800.

Spot

Flagstaff Engineering, 1120 Kaibab Lane, Flagstaff, AZ 86001, USA. Tel: +1 (602) 779 3341

Spot can read more than 100 languages in Roman and Arabic scripts, and Chinese, Japanese and Korean are planned for May 1989. It can recognize typewritten and typeset characters, and up to four fonts files each with 250 characters. Optional – intelligent – extras are a 10,000-word English dictionary and a supplementary 10,000-word user-defined dictionary. US $995.

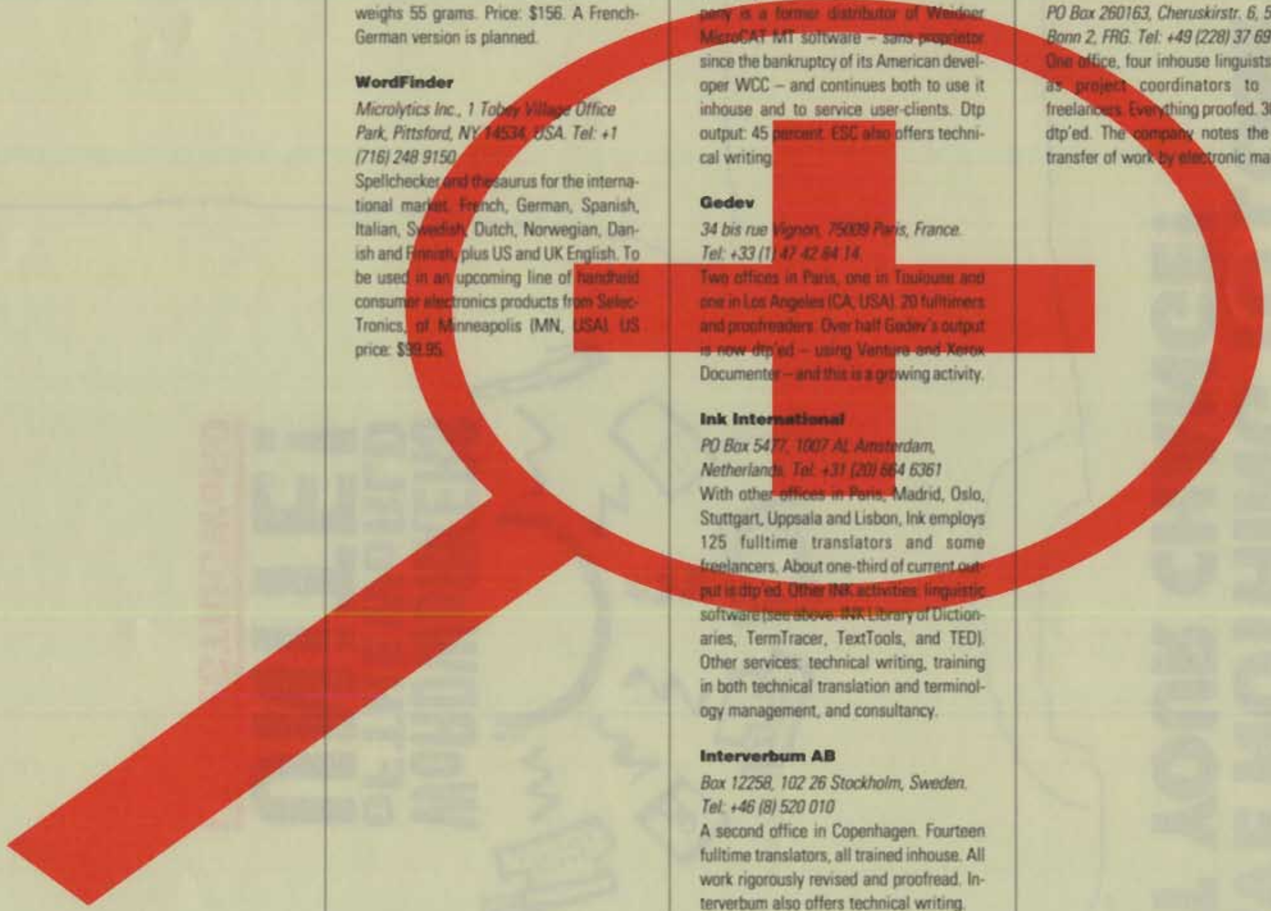
International Publish Pac

Dest Corp., 1201 Cadillac Court, Milpitas, CA 95035, USA. Tel: +1 (408) 946 7100

Dest offers three multilingual OCR products to run on its own PC Scan scanners: German Text Pac reads typewritten German characters; German Publish Pac combines OCR with image recognition; and International Publish Pac is the latter's counterpart for Scandinavian characters as well as German and English.

Dest is also testing French, Italian, Spanish and Portuguese versions of both Text Pac and Publish Pac. And for the future it plans two editions of International Publish Pac: a Northern and a Southern European version.

The products are sold as integrated packages, including a scanner, software and interface to either the PC or Mac. US



München 40, FRG. Tel: +49 (89) 36 09 60

English-German, German-English with 40,000 entries, a user's dictionary for up to 200 words, and a calculator. Langenscheidt says they're selling like little bunnies. Dimensions: 3.5 mm by 7.4 cm by 14 cm. It weighs 55 grams. Price: $156. A French-German version is planned.

WordFinder

Microlytics Inc., 1 Toby Village Office Park, Pittsford, NY 14534, USA. Tel: +1 (716) 248 9150

Spellchecker and thesaurus for the international market: French, German, Spanish, Italian, Swedish, Dutch, Norwegian, Danish and Finnish, plus US and UK English. To be used in an upcoming line of handheld consumer electronics products from Selec-Tronics, of Minneapolis (MN, USA). US price: $99.95.

ESC

Market House, The High, Harlow, Essex CM20 1BL, UK. Tel: +44 (279) 639 909

With a second office in Southampton, ESC employs six fulltime translators, all native-speaking technical specialists. The company is a former distributor of Weidner MicroCAT MT software – sans proprietor since the bankruptcy of its American developer WCC – and continues both to use it inhouse and to service user-clients. Dtp output: 45 percent. ESC also offers technical writing.

Gedev

34 bis rue Vignon, 75009 Paris, France. Tel: +33 (1) 47 42 64 14.

Two offices in Paris, one in Toulouse and one in Los Angeles (CA, USA). 20 fulltimers and proofreaders. Over half Gedev's output is now dtp'ed – using Ventura and Xerox Documenter – and this is a growing activity.

Ink International

PO Box 5477, 1007 AL Amsterdam, Netherlands. Tel: +31 (20) 664 6361

With other offices in Paris, Madrid, Oslo, Stuttgart, Uppsala and Lisbon, Ink employs 125 fulltime translators and some freelancers. About one-third of current output is dtp'ed. Other INK activities: linguistic software (see above: INK Library of Dictionaries, TermTracer, TextTools, and TED). Other services: technical writing, training in both technical translation and terminology management, and consultancy.

Interverbum AB

Box 12258, 102 26 Stockholm, Sweden. Tel: +46 (8) 520 010

A second office in Copenhagen. Fourteen fulltime translators, all trained inhouse. All work rigorously revised and proofread. Interverbum also offers technical writing.

InTra eG

Charlottenplatz 17, 7000 Stuttgart 10, FRG. Tel: +49 (711) 22 50 86

A cooperative of 37 translators throughout Germany, France and the US (InTra has an office in Fort Myers, FL). In addition, eight fulltimers and about 100 freelancers. About 5% of InTra's output is currently dtp'ed, but this is on the rise. The cooperative can also offer interpreting and client terminology management.

The company has its own inhouse PC-based writing software, TEKsoftware, which includes wordprocessing, dtp and typesetting.

Translingua GmbH

PO Box 260163, Cheruskirstr. 6, 5300 Bonn 2, FRG. Tel: +49 (228) 37 69 64

One office, four inhouse linguists who act as project coordinators to 100-odd freelancers. Everything proofed. 30 percent dtp'ed. The company notes the growing transfer of work by electronic mail.

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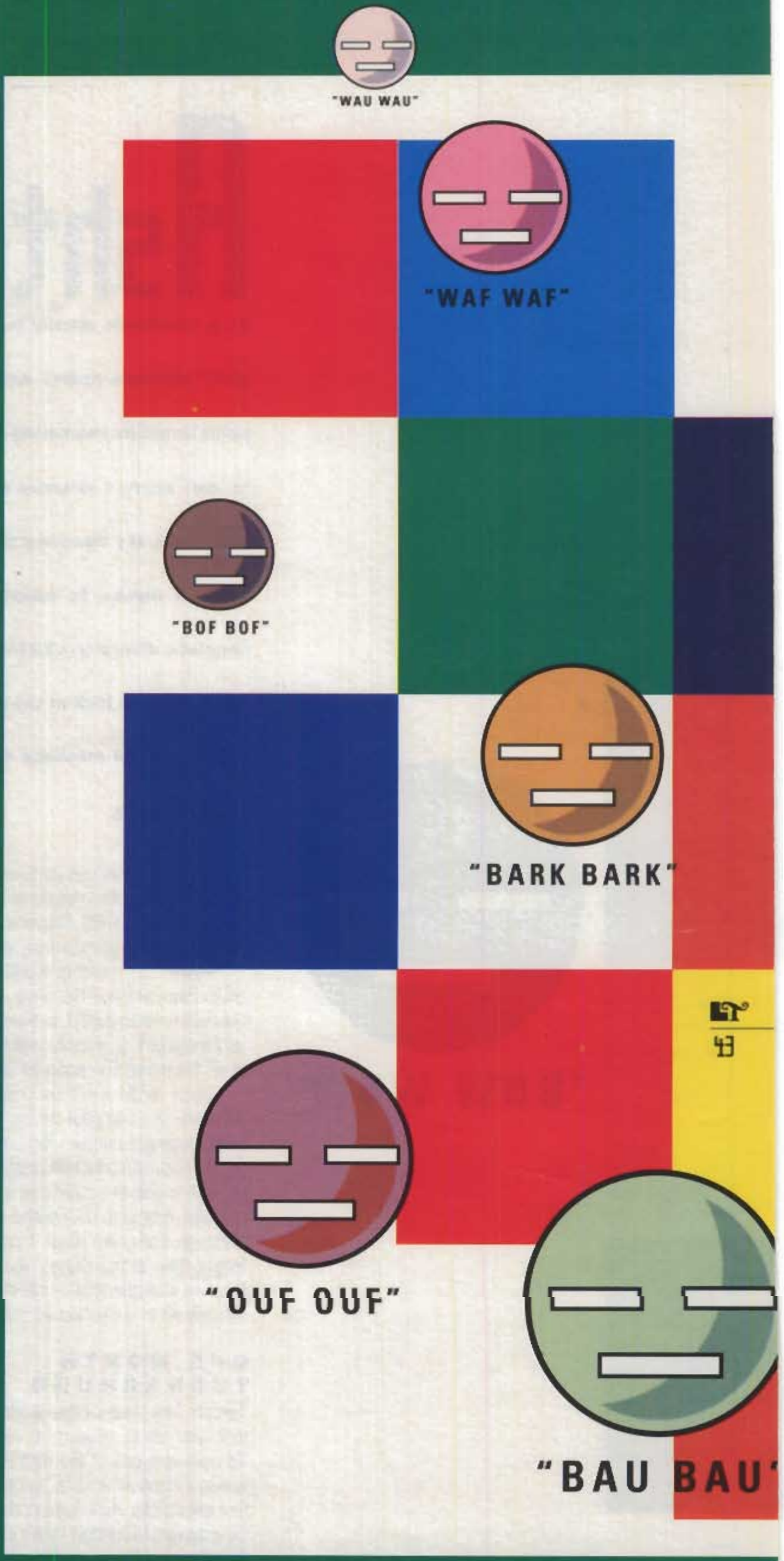
Eight Case Histories From The Tower Of Babel

We started out determined not to allow *that* over used expression to creep into this "1992" issue of LT/Electric Word. Then all these harrowing examples of the localization blues started crossing our desks, and we were forced to reconsider: what we are confronted with here is truly *The Tower of Babel* beyond cliché.



In the following eight stories, you'll read why. You'll also read how the determined will overcome that destructive – but exhilarating – fate called multi-culturalism that plagues the first world. Want a taste? Paul Fisher explains why Ashton Tate's dBase 4 *Tools* are definitely not *Werkzeuge* in Hunsbrück, but *Diversen*, and why they're definitely not *arnesi* along the Po, but *altri servizi*.

Andrew Joscelyne, our British Paris-based correspondent, weighs in with a report on how UAP uses the theories of Schützenberger on finite state automata to find out if your "broken left leg" is an element in the risk calculation of your insurance sales bore.

Juris Kaza explains why a roller bearing catalog in Serbo-Croat may not be the bible to you, but it definitely makes SKF's little heart palpitate.

Marie-Claire Dassen discovers why Canon Europe cannot support Greek, while Levi Rizemnikof is back with an eyewitness story on one branch of trade that determinedly breaks with the 1992 taboo against lingua franca: the world of writs and torts.

Joscelyne returns once more, this time trying hard to find the French roots in the pan-European, upscale-trash, quintu-lingual weekly Match, while Richard Sarson admits he definitely felt languid about the gentleness called *convivialité* that ICL displays towards the French.

Last, but not least, LT's rookie German correspondent Ralf Kohlrausch talked to PKI's *Metal People*, who make a living feeding paper to an MT system that's been taught not to translate Darmstadt into Boweltown.

Conquering 1992, at your fingertips.

Ashton Tate

As a worldwide market leader, US off-the-shelf software maker Ashton Tate takes pains to get its marketing right – both within and beyond America's borders. More than most, the company takes no chances when it comes to adapting to Europe's linguistic diversity. LT/Electric Word's Paul Fisher takes a look at the pitfalls and price of getting your message across in a multilingual market.

The goal is to localize inside of four weeks

By Paul Fisher

Let's assume we're in the middle of this magazine's issue dates. It's 2-6-89, Republic Day in Italy, so congratulations there. 2/6/89 is just another working Friday in France and Britain, as it is in Germany, though they'd prefer the date written 2.6.89. In Sweden it's 89/6/2, and for Americans, anxious to make business sense out of all the minor European differences, it is 6-2-89.

Such detail must be correct if PC business software is to appeal to the parochially-minded small business people who buy it. But translating this software and the bulky instruction manuals that go with it has to be done in a hurry. The average package has just 18 months on the market, and although European shelf lives can be stretched longer than in the States, the Old World likes to keep up with the New – which is, after all, where virtually all mass-produced software originates.

ONE MONTH TURNAROUND

Ashton Tate, one of the world's largest vendors, took just three months to rush out French and German versions of the dBASE 4 package, which was launched on its home territory last October. Not fast enough for Nick Pollard, the European marketing manager of Ashton Tate's European Translation Coordination Center at Slough, near London. "Our objective," he says, "is to do it inside four weeks."

That's going to take more cooperation and understanding from Ashton Tate's programmers in Los Angeles. They are issued with an inhouse manual called the International Functional Requirements Document, which has chapters on national language standards and national character sets. That's taking care of the technical side of things, not the more mundane issues.

American programmers are encouraged to make their programs as open as possible to amendment, certainly with regard to anything displayed onscreen. Especially helpful are screen layouts that allow space at the bottom, because translations from English, particularly into German, tend to take up more room. A few substitutions like *unterstreichen* for "underline" and *Bildschirm* for "screen" soon defy German translators dealing with a packed screen of English text.

The biggest problem is with the how-to-use-it examples that always fill software manuals. There was the IBM accounting package telling English readers of the gardening company that "put sod in the garden." A reasonable enough idea to an Englishman with some sod(omite) he wants to liquidate, but the example made more sense when the American "sod" was replaced by "turf."

American Zip codes and Social Security numbers are similar examples. The latter are invariably abbreviated to "SS numbers." Zip codes sound vaguely kinky in any other language than American, and there can't be many Germans alive who want to be reminded of their SS number.

LOCAL TRANSLATORS

Instead of employing inhouse translators, Ashton Tate follows standard practice by subcontracting translation work out to the countries where the packages will be sold. Its main translation agencies are Ink, with head offices in Amsterdam and subsidiaries in Scandinavia, France, Spain and Germany, plus Krieger Zander in Munich, Lexitrans in Spain, Ulise in Italy, and T-Micro and Team in Sweden.

"We use translation companies," Pollard explains, "in the same way that we use specialized accounting and legal services. They're sensitive to local requirements. Additionally, we now find that they employ translators with a basic knowledge of computers."

Ashton Tate supplies the agencies with its own Translation Kit which displays text to be altered – in Ashton Tate's jargon, the "resource files." Shorter messages are displayed with a translation box adjoining for immediate translation, while full-screen windows scroll down for the full-page help screens. The Translation Kits are guarded to avoid software piracy, barring, for instance, translation companies from access to any code that might lay Ashton Tate's commercial secrets bare.

All aspects of a program's interface are translated or adapted except for embedded programming language such as that of dBase 4. Ashton Tate takes the line that anyone expert enough to dig into this core text will be conversant enough with English as computing's *lingua franca* to cope with commands like "ACTIVATE WINDOW," "CALL," "COPY FILE" and "DEFINE BOX." Every other bit of English is translated.

THE RIGHT WORD

Programming Kits and well-briefed American programmers all help, but Pollard points out that eventually he has to rely on a mixture of the translators' expertise and sympathetic familiarity with technological terms.

Take, for instance, a word like "tool." Before you get very far into dBASE 4, you'll get to the Control Center part of the package. This displays the main options to be followed, and on a menu bar at the top of the screen, one of the options goes under the word "tools."

In common-or-garden English, "tools" include chunky spades, spanners and saws. In Computerese, the word has been extended into a serviceable metaphor for commands such as those to list the files already in store.

The metaphor doesn't work in Germany, where the literal translation of "tools," *Werkzeuge*, would mean much in the working life of a Mercedes mechanic but merely perplex an office worker. So in the German version of dBASE 4, "tools" are *Diversen*, which directly translates as "miscellaneous. Similarly, a direct translation of "tools" into the Italian *arnesi* is good for a Fiat mechanic but not to an Italian computer and so here *altri servizi* (literally, "other services") is used.

The French translation is simple enough . . . *utiles*, and suggests why English-speaking computer experts use the words "tools" and "utilities" interchangeably.

Incidentally, "tools" isn't even universal in English Computerese. In IBM-speak they are known as a "directory of file utilities." But "tools" they are for Ashton Tate, and indeed it doesn't hurt untutored computer users to think of themselves as mechanics wrenching information into a workable shape.

There are further divergences. Where the IBM Structured Query Language (SQL) refers to "columns" and "rows" (i.e. a full address and the Zip Code part of it), Ashton Tate prefers "records" and "fields." A "field" in this instance is translated literally into a German *Feld*, a French *champ* and an Italian *campo*.

If you've ever suspected that computing might be a latter-day Tower of Babel, rest assured you're not the first.

EUROPEAN HQ'S

In fact, it sometimes seems that in computing, nations shall never speak unto nation – at least not without a good deal of hassle. And for software exporters, this adds up to an expensive marketing problem. dBASE 4 was a mammoth translation chore involving a 3,000-page instruction manual plus 1,500 menu screens and 5,000 help messages. Each page of the manual, says Pollard, costs between $20 and $30, with text on the screen costing between $1 and $3 to translate. Total bill for a single translation: $250,000. "The price of being thorough," Pollard calls it.

With translations into French, German, Dutch, Italian, Spanish, Swedish, Portuguese, Danish, Norwegian, Finnish and Arabic, the bill for just one package will be $2.5 million. Multiply that by the 20 packages that Ashton Tate has on the market, and it's $50 million. Add to that its main competitors, Lotus and Microsoft, and you have 150 million dollars' worth of translations for general purpose PC software packages alone.

Although Ashton Tate has a policy of devolved translation, there are still 30 people working under Pollard at the European Translation Coordination Center at Slough in England's hightech Thames Valley. Nick Pollard, who is not a linguist aside from his fluency in market-speak, "looks preferentially on job applicants with language ability" and has Dutch, Greek, French, Parsee and Polish speakers on the staff.

However, he'll take anyone with skills in software project management and the bureaucrat's ability to cope with such nightmares as printers who produce boxes, binders and keyboard templates on top of documentation and the software itself.

Ashton-Tate's Nick Pollard

FRENCH, GERMAN, COBOL . . .

Joanna Zaremba, a project manager who looks after the German distributor, liaises with German translators. She's the main contact they have with Ashton Tate, as they never talk to the programmers in America. She is a thoroughly modern linguist who learnt Polish at home, is also fluent in German and English and has more than a smattering of French and Italian.

She has other languages too . . . dBASE, Basic, Fortran, Cobol and Assembler. "I don't speak those though," she says. She echoes her boss saying: "The type of people we're interested in to localize our packages aren't simply straightforward local translators. They've got to understand our market and have a basic grasp of the technology. These things are more important to us than beautiful grammatical structure."

There was the IBM accounting package telling English readers of the gardening company that "put sod in the garden." A reasonable enough idea to an Englishman with some sod(omite) he wants to liquidate, but the example made more sense when the American "sod" was replaced by "turf."

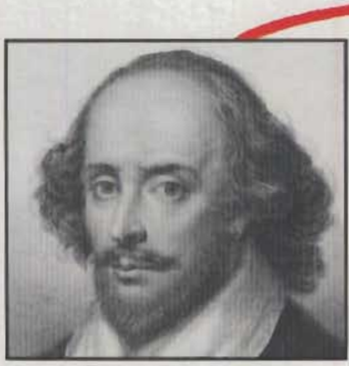
And that understanding doesn't necessarily have anything to do with either computer or human languages. Translators must, for example, keep document translation the same length as the original English to prevent bulkier manuals bulging out of standard boxes.

Indeed, it's the print and production problems that preoccupy Pollard. When asked what technical developments would improve his job, he talked of the opportunities of desktop publishing to speed up package translation times from three to one month, and even greater commitment from his colleagues in the States.

Any possibility of using PC technology to automate the business of translation? "One day," he says, "I'm sure artificial intelligence techniques will give us serviceable automated translation tools. Some of the translators we use have multilingual dictionaries onscreen, but the purists have their doubts. I have an open mind, but I suspect automation isn't going to help us for a while yet."

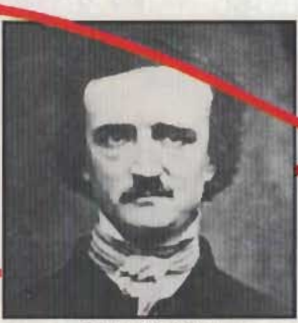
Paul Fisher *is a London-based freelance journalist who writes for the Guardian and the Independent newspapers.*

From Shakespeare to MacProof...



William Shakespeare
1564-1616

Jane Austen
1775-1817



Edgar Alan Poe
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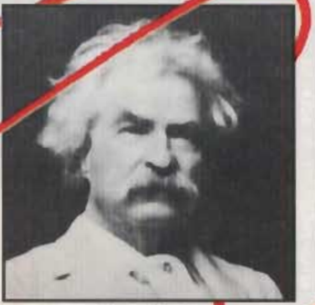
Charles Dickens
1812-1870

Henry David Thoreau
1817-1862



Mark Twain
1835-1910

James Joyce
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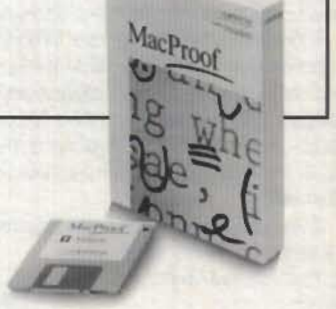

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UAP

The salesperson arrives with a laptop and a natural language interface.

By Andrew Joscelyne

Fifteen thousand letters a day, some twelve million fire, accident and other risk policies, together with another six million life insurance contracts . . . It all adds up to big mobs of words. And assessors at the Union des Assurances de Paris, France's top insurance company, have to plough through a goodly few of them before even beginning to calculate premiums or pay out on claims.

Not surprising, then, to learn that the mammoth company, which has two high-rise towers to itself in Paris's La Defense business district, is investing in language technology to help process this enormous workload.

As tertiary sector operators, insurance companies such as UAP usually don't have R&D departments to help them design new products. But with the growing internationalization of markets, the pressure is on to find new solutions to gain and maintain them. And this means, in the last analysis, computer applications.

About five years ago, UAP, a state-owned corporation with an annual turnover of 55 billion francs ($8.5 billion) realized that it needed to enter the techno-age. It set out to address the problem in two ways: first, by offering its top management state-of-the-art information on new technologies likely to improve business prospects and productivity; and second, by extending its traditional "technical" department to include collaborative projects with academic and other research groups.

SIGNING UP SCIENTIST

So in 1983, look-ahead former UAP chairperson Yvette Chassagne instituted a scientific council composed of academics and applied scientists, whose job it would be to set policy on research and training strategy for the whole company in close collaboration with director general Roland Lejart. The council's president is Professor Moshé Flato, an internationally recognized mathematician and physicist.

The executive instance of this policy was, aptly enough, called the *Mission des Technologies Nouvelles*. And in 1985, Erik Taflin, an assistant professor of mathematical physics at Geneva University, was given the task of coordinating its activities. One of the first fruits of its work is already at the prototype stage: a natural language interface allowing free-form text to be entered on an insurance policy document stored on one of UAP's big IBM 3090's.

Swedish-born Taflin diagrams the whole interface scenario on the formula-festooned whiteboard on the wall behind his desk.

It goes like this. An insurance salesman arrives at your home with his laptop computer, trying to sell you life insurance. He asks you questions about your job, your medical history and your sporting activities, allowing you total freedom in your replies. Multiple choice questions just don't work for risk calculation, so he has to enter it as full text.

Using a modem link to a switched data network, he can send the information you've given him straight to the natlang interface rig in the UAP processing center, where it will be read off, coded and rammed straight into an expert system. Here, the insurance risk in question will be automatically evaluated, and the output profile from the ex-sys will then enter a premium-assessment module, which will provide an instantaneous costing for the policy.

The result will be returned to the natlang rig, encoded into French and zapped back to the insurance man in the field. He will read off – or print out – the policy, so you can decide on the spot if you want to buy. Quick and clean, *n'est-ce pas?* But fiendishly difficult to cobble together.

ELECTRONIC DICTIONARIES

True to their "scientific" policy, UAP have gone to the top in their choice of collaborators for the interface solution.

To get a system to process the words entered by the insurance agent, you need a set of operational electronic dictionaries and some kind of a parsing machine that checks the possible combinations of words. The ideal linguistic solution would be a full-blown French understander, but such things are still a only a gleam in researchers' eyes.

Who better to help out than the famous LADL (Laboratory for Automated Documentation and Linguistics) team under the far-sighted leadership of one Maurice Gross?

"30 percent of machine time during a run is spent on spelling correction"

Logically enough, Gross, professor of computational linguistics at the University of Paris VII and director of LADL, was invited onto the UAP scientific council in 1984, when his patiently constructed "lexi-grammar" electronic dictionaries were proposed as ready-mades for the initial interface processing. In another move, Laurent Pivaut, one of Gross's doctoral candidates, joined the UAP New Technologies team in 1986 as a linguist, knitting ever-closer links between UAP and the university research team.

To get the rig to process the input, UAP needed not only the basic dictionaries, already developed by LADL, but also a set of specific applications dictionaries for professions, medical info and sporting activities, plus a further list of all the compound nouns in the three fields ("heating engineer" or "back injury").

Stitching them together meant long hours of analyzing typical insurance contracts for formal patterns of word usage. And since the text was to be input by an error-prone human being, a robust phonetic-form dictionary was used to help correct spelling before the heavy work of processing began. "30 percent of machine time during a run is spent on spelling correction" says Pivaut.

FINITE-STATE AUTOMATA

Then came the hard part: building some kind of contraption to handle the syntagms. That is: to predict that an entry such as "broken left leg" is a possible element in a risk calculation, while "broken sinusitis" or "fractured back arm" aren't. In other words, among all the millions of possible combinations of words in the language, which are the plausible ones for the application in question?

Pivaut, with Françoise Brunet of the UAP computer department, solved this problem elegantly, by using the theories of Paul Schutzenberger (yet another UAP scientific council member) on finite-state automata that generate a standardized syntactic output from the language end of the automatic processing of policy contracts. This output is then ready to enter the risk-evaluation ex-sys module, which is organized around the semantic interpretation of a client's profile. "This is the first time finite-state automata have been used in an operational natural language interface", claims Pivaut.

It would have been possible for the rig to output a UAP-dedicated semantic interpretation directly, plugging the phrase-structure automaton straight into the expert-system doing the risk evaluation. Pivaut reckoned however that for reasons of maintenance and future development, it was best to split the language recognition and semantic interpretation parts. "It leaves the language module free for other uses, since only the semantics module need be rewritten for another application."

Of the three modules comprising the total automatic insurance contract utility, the tariffs calculator poses no problems, being based, as Taflin says, "on existing computer applications." A prototype of the risk evaluating expert system is already running on a dedicated machine, but is not yet integrated into the whole computerized actuarial system.

"It's difficult to port to the central computer," explains Taflin, "since in a tertiary sector activity like insurance, languages such as COBOL have been traditionally used for all accounts management work, whereas the expert system is written in Lisp. It'll take about a year to do the rewriting necessary for full integration."

As for the natlang interface itself, the prototype can today recognize entries for professions, plus a generous subset of typical medical data input by potential clients. The rate of "understanding" should stabilize at 90 percent. But as Taflin explains: "Ten percent of all client data is so complicated that it has to be sent to a doctor for additional detailed entry." He predicts that in a year, the whole rig will be up and running, decentralizing insurance policy proposal management and releasing staff from the drudgery of routine paper pushing to work on the interesting contracts.

NEURAL NETS

Moshé Flato's scientific council and UAP Director General Lejart have even anticipated the input problems faced by a brilliant but keyboard-shy insurance salesperson.

In keeping with the company's top-end partnership policy, UAP is collaborating with US physicist Leon Cooper, who won a Nobel Prize for work on superconductivity and now runs a company called Nestor, dedicated to neural network applications. Together, they are developing a "handwritten data input device," which will learn to recognize – the neural way – the agent's manuscript copy without using up precious computer power modelling the letters – as in all current handwriting recognition rigs.

Taflin sees a profitable future for such a device, not only in insurance but also in banking. (How fortunate that UAP has just announced a joint development program with the Banque Nationale de Paris, the leading French commercial bank, in the fields of insurance, credit sharing and savings management.) And UAP plans to develop and distribute the product in partnership with "one of the biggest computer manufacturers" – though which one remains a secret.

The paperless office is a logical forerunner of the idea behind the automatic natlang processor.

This UAP method of developing hightech products with other companies has already paid off. As can be imagined, the paperless office is a logical forerunner of the idea behind the automatic natlang processor. And UAP has already produced a system that takes some of those 15,000 daily letters, digitizes them via a scanner and stores them for online consultation by interested departments. Philips now commercializes the device under the name IMAMEGA.

Even the lowly telephone operators get a look in when it comes to UAP technology upgrading. UAP is developing another inhouse application of the LADL phonetic-form spell corrector module, this time as a name-searching system for the company telephone operators.

Someone rings up and wants to speak to a staff member whose name they know but cannot necessarily spell. The operator will enter a phonetic approximation, and the system will produce a list of possible names held on the company books, based on the phonetic template. No doubt about its usefulness: UAP has a total staff of 27,000 on their house phonebook!

Andrew Joscelyne *is LT's roving West European correspondent*

PROCESSING A NATURAL LANGUAGE ENTRY

DICTIONARIES

An input expression will be processed as a simple string of written characters bounded by blanks.

The algorithms that can encode, search and compress such strings are relatively well known. First, a recognition check will be run against the 65,000-form single-word LADL dictionary (DELAS) and the 550,000-form conjugated-word (verb endings, plurals etc.) DELAF dictionary. The purpose: to see that the words in the entered text exist.

For the special UAP application, there is an additional 2000-word special sports terminology dictionary, plus the professional and medical term dictionary, neither of which is yet complete.

SPELL-CORRECTORS

If a certain string is not recognized, it is checked by DELAP – the electronic dictionary of phonetic forms – which will spot typing errors immediately and offer a list of possible target forms for correction by comparing with canonic spelling forms.

Among the spell-corrector techniques used is a trigram (three-letter) recognizer, which allows the system to spot a reversed combination (e.g., "tsr" instead of "str") instantaneously. Of the 54,800 possible trigrammatic combinations in French – 38^3: the cube of the number of letters in the alphabet – only 8000 actually exist in lexemes. So knowing this speeds up what can be a lengthy search time.

Another method is to attribute to each letter a prime number, so that when letters are combined into words, the multiplication of the primes gives a numerical value N to the word. Two words with the same N will therefore be anagrams, thus allowing the speedy listing of all possible words for a given N in case of non-recognition.

THE (FINITE-) STATE OF THE ART

Once corrected, the input will be reprocessed by the DELAS and DELAP dictionaries, ready for entry into the compound-structure recognition module composed of a set of finite-state automata.

These abstract "circuits" represent a phrase as a pathway through a possible sequence of states. If the entered phrase arrives at the final state, the phrase is accepted as possible and is given a standard form.

The automata also show the underlying relation between structurally different expressions. For example: "broken left arm," "left arm was broken," and "broke my left arm," without needing to list every single variation.

The output from the automaton can thus be considered a "standardized" form, eliminating variation and ready to enter the expert system where it will be treated as a "semantic" unit. A string such as "broken left arm" output as a "standard" form by the automaton will therefore be correctly interpreted as "broken limb" by the ex-sys semantics.

The advantage of using finite-state automata is that incoherent expressions will never find a pathway through the automaton and are thus rapidly eliminated from the processing. Different subject areas will of course need different automata. So there is a "fractures" automaton, as well as diseases and internal medicine automata.

The linguist's first job, therefore, is to analyze typical occurrences – and that means going back to the "field" to see what people actually tend to write on their policy forms in the first place.

Canon Corp.'s multilingual documentation burden is an onerous one. It encompasses brochures, technical manuals and user manuals on products ranging from calculators to laserprinters – all in no less than thirteen languages. And to cope, Canon has been working on its own solutions – like a translator's guide for determining the amount of space the work will take up, and a translator-friendly wordprocessor that will automatically generate typesetting codes.

Marie-Claire Dassen took a trip to the Japanese giant's suburban citadel.

TWO-PRONGED APPROACH

The entrance hall to Canon Corp.'s new European headquarters looks like something between the Forum Romanum and Stonehenge. Its message: this company thinks *big* and thinks *European*.

Here, in Amstelveen, on the outskirts of Amsterdam, documentation on a vast array of consumer goods is produced for a large segment of the world market.

Two years ago, the company decided to divide document production into two departments: one to handle promotional material and the other post-sales documentation. Since then, both departments have developed their own individual working methods.

While document production has been centralized on a European level, translation is done locally. Product managers at Canon's local European offices are in charge, and most of them use regular freelance translators to do the job.

Once the translations have been returned to Amstelveen, the texts are combined with photographs and other graphic materials, then printed and distributed throughout Europe, the Middle East and parts of Africa.

SALES MATERIAL

Canon's Marketing Services Department is responsible for the production of promotional material. Each year, it produces ten to 15 million A4 pages of brochures and related sales documentation.

A lot of paper indeed, but not one page too many. As Marketing Services manager Roodhuyzen de Vries puts it: "When introducing a new product, Canon normally has only one sample machine for each market. In a big country like Norway, for example, that's not enough to show everyone interested in the product. As a result, most purchases are based on the information in the brochures."

In the production of such brochures, Canon's own people are assisted by freelancers such as copywriters, translators, designers, printers and lithographers. De Vries: "I'm happy to say that more and more work is being done externally. With the growth Canon is experiencing, it's impossible to do everything by ourselves and still keep the process under control."

De Vries and his staff coordinate the production of brochures. They make a briefing, from which their regular copywriter and designer produce an English manuscript. This manuscript, in which the text has been placed in its final position, is then sent to the product managers for each country.

This is where the problems begin. Not only does the manuscript have to be translated into twelve languages (German, French, Dutch, Norwegian, Danish, Swedish, Finnish, Spanish, Italian, Greek, Portuguese and Arabic), while maintaining the uniformity of style Canon wants to see in its brochures. But all these translations have to be back

OFFICE AUTOMATION

Canon

Canon's proprietary translator-friendly wordprocessor slashes the cost of adding new languages 60%.

To the Japanese, Europe has always been a unified market.

By Marie-Claire Dassen

in Amstelveen on a given deadline, the vagaries of local postal services notwithstanding.

TECHNICAL DOCS

The Technical Documentation Department is responsible for post-sales documentation, which includes user manuals and technical references. Like Marketing Services, Technical Documentation likes to avail itself of external expertise to keep production of some seven million A4 pages of text per year manageable.

The production of purely technical documentation such as parts catalogues and service manuals is distinctly different from that of user manuals. Since service manuals serve as training material for maintenance personnel, it's essential that they be produced as quickly as possible. As soon as Canon has an assembly-line-ready prototype, training has to begin.

For this reason, service manuals are developed very early in the production cycle of a new product. These manuals are aimed at technical personnel, so factors like layout and attractiveness are of secondary importance.

User manuals, however, have to be both clear and attractive, since they form part of the Canon image. Or, as assistant general manager Jan Hoekstra, who together with Etienne Veen, a graphical designer, oversees the production, puts it: "A good machine is useless if its documentation is lousy."

For technical documentation, the basic manuscript is produced at the Canon head office in Tokyo. There, technical writers create first a Japanese, then an American English version of all service manuals and catalogues. This text is sent to Amstelveen, from where it is then sent to all the European distributors.

The American English manuscript is translated into a number of European languages and printed. Service manuals and parts catalogues are translated into just French, German, Spanish and Italian. Speakers of other languages will have to make do with the English version.

During the production of end-user documentation, a lot of attention is paid to layout, illustrations and use of color. The English manuscript likewise originates from Tokyo. After being checked in the United States, it is sent to Amstelveen, together with the lithos for printing.

From that moment on, it is Hoekstra and Veen's responsibility to produce this same manual in twelve other languages (those mentioned above with the exception of Arabic but including British English), without having to make new lithos, since this is the most expensive part of document production.

HELPING THE TRANSLATORS

What with rectified defects, the standardization of non-standardized parts and the discovery of more economical means of production, service manuals also need to be updated regularly. To keep everyone up to date, Canon publishes service bulletins.

Hoekstra estimates that for a product with a production cycle of three years, an average of 100 changes will need to be made in its manual. As with the manuals, the service bulletins are first written in Tokyo, then translated, printed and distributed by Canon Europe.

An ongoing problem is fitting the longer European texts into the layout of the original manuscript (Finnish is notoriously problematic). Although some extra space is usually reserved when the layout is designed, a lot of word juggling still needs to be done before a text is both adequate yet not too long.

To make life easier for its translators, Roodhuyzen de Vries' department is now developing a translators' guide which generates grids to assist translators in estimating how much space their work will require.

For manuals aimed at technical personnel, factors like layout and attractiveness are of secondary importance.

Another typical problem faced by Canon translators is the challenge of keeping up with technical developments in their fields.

De Vries: "This company makes over two hundred different products, ranging from pocket calculators to heads for artificial satellites. Just keeping up to date would be a fulltime job in itself. No one can do this and translate at the same time.

"On the other hand, if translators are *too* knowledgeable about the subject matter of the texts they are translating or editing, they tend to rewrite the text, instead of simply correcting it – which is what they are hired to do."

In addition to considering length and fidelity, translators must also include typesetting codes in their text. Typesetters could be hired to retype the bare texts and insert the required codes, but this is not a good solution, since typesetters cannot be expected to be fluent in thirteen languages, let alone type them accurately.

Hoekstra and Veen decided not to try to skirt around the problem but to eliminate it: in the last two years they have been developing a translator-friendly wordprocessor.

Canon Europe supplies the translator with the original text on a floppy disk, and the translator can simply type over the English as it is displayed on the screen of his/her PC. The typesetting codes are embedded in the text and can be ignored. This way translators can do the job they were trained and hired to do: translate.

CANON'S OWN WP

Under Hoekstra and Veen's supervision, a Canon team took two years to develop the program. Why not use an existing wordprocessor?

Hoekstra: "The problem was that there was an enormous diversity in the working habits of our translators. One worked with two of the newest PC's – one for his source text, the other for his translation. Another of our translators, however, still wrote everything by hand and had his wife type his manuscripts.

"Both are excellent translators, but their methods of working couldn't be more different. Our job was to find a wordprocessor they and all their colleagues could work with. One that wasn't too sophisticated for the one nor too simple for the other."

Unable to find what they needed, Canon decided to develop one themselves. It had to be efficient, economical, suited to translating, and run on a PC.

Hoekstra and Veen first talked to their translators and asked them what they wanted. A wordprocessing program was developed on the basis of that information and introduced last February. So far, reactions have been favorable.

The Canon program can be adapted to any language, including different keyboards such as the English QWERTY and the French AZERTY. The only language not supported is Greek, simply because keyboard layout has never been standardized in Greece.

To illustrate the amount of time Canon is gaining by using this program, Veen showed a printed manuscript produced from a floppy disk received just two days earlier. Before the introduction of the new wordprocessing program, it would have taken at least three to four weeks to prepare such a translated text for printing.

The economic benefits are likewise decidedly tangible. Calculating the cost of the original English manuscript at 100%, in the old days each additional language would cost another 50%. For thirteen languages, this meant a total of 700%.

With the new system, each additional language costs just 10% of the original, bringing the total, for all languages, to 220%. A saving of more than 60%.

Any other hightech tools being examined? For very specific texts, namely the instructions on the copiers and printers themselves, a terminology database is being set up in Tokyo. Canon is standardizing these texts because of the very limited amount of space available.

Still, one question remains. Where does Canon keep all those millions of sheet of papers they produce each year? The answer to this question can be found right behind the neo-classical entrance hall. In a huge warehouse. Where else?

Marie-Claire Dassen *is a freelance writer living in Amsterdam.*

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SKF

Hardware, software? The old ways are best: warmware

By Juris Kaza

Sweden's SKF (Svenska Kullager Fabriken), the roller bearing manufacturer, has annual sales of over $3.1 billion, of which 95 percent are outside Sweden. With headquarters in Gothenburg on Sweden's west coast, SKF is represented in 130 countries. SKF's single largest operation is in West Germany, followed by Italy and France. For all practical purposes, SKF is a European Community company.

Human know-how and translators' brains are still the core of multilingual documentation activities at SKF, according to marketing communications manager Jan Johnsson. Johnsson says that the company's single most important multilingual "document" is its main product catalogue, which covers some 1,000 pages and is produced in 15 languages. The catalogue lists some 25,000 roller bearing and related products and is updated once every five years, with the current issue coming out this year.

The five-year cycle means that the last time the catalogue was produced, the entire Macintosh-inspired desktop publishing revolution had not yet been born. It also means that the next time SKF will confront the problem will be 1994 – and what technology will be available then is anybody's guess.

Johnsson stresses that while most of SKF's inhouse translators use wordprocessors to produce their final product – diskettes and hard copy are sent to Gothenburg for final checking and text formatting before typesetting – there are no plans to break into machine translation or other translation assistance software or hardware.

"The way the main catalogue is produced is that it is compiled at SKF GmbH in Schweinfurt, West Germany. It is written in German and simultaneously translated into English by our technical editors. They set the terminology," explains Johnsson. "The English manuscript then becomes the document from which all other translations are made. For instance, the English proof is used by SKF in France to do the French translation."

"Artificial intelligence cannot replace the human translator. It might be able to simplify a few steps, but you still need the human senior translator . . ."

All subsequent translations, into a total of 15 languages, are then done by SKF subsidiaries in the appropriate countries or regions. Aside from English and German, the main catalogue appears in Italian, Spanish, Portuguese, Dutch, Swedish, Finnish, Polish, Serbo-Croat, Russian, Hungarian, Chinese and Japanese. The typesetting of all versions, mainly from diskettes produced on IBM PC/compatibles, is performed by Stybo A/S, a Danish company that specializes in multilingual phototypesetting.

DECENTRALIZING

According to Johnsson, SKF has a number of other technical publications and smaller specialized catalogues that are published with greater frequency than the main product list. "What languages are used varies according to which countries are interested," he says, adding that translation is then done locally.

"For advertising and commercial publications, we have a Language Manager, a British person employed by SKF in England, who supervises the correct use of English in all printed matter and can also proofread in English, Spanish, French and Italian. He then has contact persons in the organization whom he can call to check anything suspect that's not in English but in one of the languages he can read."

SKF's documentation would appear to lend itself to centralization, such as the use of a single, worldwide, workstation-based documentation system, but Johnsson says there are no plans to implement anything of the kind.

"We see all business as local. So we are decentralizing more and more. As far as terminology goes, the local units can use the main catalogue in their language as a reference," he says.

At times, SKF has experimented with using outside translation agencies, but this has proven unsatisfactory, according to Johnsson. If SKF has any language policy at all, it is that the inhouse language is English – just as in many other Swedish multinationals.

"It has been this way since the 1960's, since before my time. We require decision-makers above a certain level to be able to communicate in English," Johnsson explains. "When it comes to recruiting otherwise highly qualified employees, this company is favorably inclined to providing considerable training in English. We either use local resources, or we generally send people to England for intensive studies at one of the major language schools."

UNDERDEVELOPED

With no intention of plunging into state-of-the-art electronic translation, SKF would appear to be exposed at some key points to all the vagaries of reliance on human expertise. Its multilingual "Language Manager" will someday retire and could, at any time, be recruited away, fall ill or – not to shy away from the least savory of possibilities – drop dead.

Can the pattern-checking and recognition abilities possessed by an individual be approximated by an artificial intelligence program using the manager's experience of the most common errors in the language he reads? Perhaps . . .

Christopher Cynkin, managing director of Interverbum, a major translation agency in Stockholm, says that his firm – as well as many multinationals in Sweden – would probably be interested in translation assistance technologies if they were available and suited to the tasks where they are needed most.

"What I am waiting for most is when we have CD-ROM products that suit our needs in technical translation – and when we have dictionaries in our special fields on read-write or at least WORM CD's," Cynkin says. Interverbum presently uses IBM PC/compatibles, and staff sometimes work online with customer mainframes and customer terminology databases.

He says that as far as multilingualism goes, "Sweden is not in the EC, and therefore there is a lack of research and development in the field. This explains why we're underdeveloped and still waiting, for instance, for CD-ROM products."

Another factor is that Swedish-based multinationals have so far fared well communicating in English with their own subsidiaries and the higher-level management of their customers, leaving local-language communication to their local organizations.

The Interverbum manager has regularly attended international seminars on machine translation but is, as yet, not impressed. "Artificial intelligence cannot replace the human translator. It might be able to simplify a few steps, but you still need the human senior translator to be responsible for the project as a whole."

He says that theoretically, a project that is essentially a gigantic list, such as the SKF catalogue, might lend itself to machine translation, but would still require close supervision by human experts. Any machine errors – which tend to be grotesquely amusing – would be around for the next five years.

Juris Kaza *is LT's Scandinavian correspondent*

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Skadden, Arps

1992? Problem, what problem?

A priori, practicing law across international borders should mean confronting language problems. According to the world's biggest law firm, however, language is not only not a problem, it's an opportunity. Why? Because the American law firm Skadden, Arps knows that international law has a lingua franca (and we'll give you a hint, it's not Latin).

by Levi Rizetnikof

It's axiomatic: law firms create paperwork, and big law firms create a lot of paperwork. With its mind-boggling 1000 lawyers, Skadden, Arps is the largest law firm in the United States (and hence probably the world), so one might logically deduce that it has the largest paper handling problem. And now with a presence in Europe and Asia, one might also reasonably deduce that this problem is compounded by practicing law in different languages. One might further deduce that as a consequence of its American and foreign experience, Skadden, Arps would have a thing or two to teach other law firms about automating paperwork, in one or many languages, and one would be right – and wrong. Right about automation, and wrong about dealing with many languages.

Headquartered in New York, and with six other US offices, Skadden, Arps provides a broad range of legal services to over one-third of the Fortune 500 industrial corporations, ten of the top 15 US commercial banks, 23 of the top 25 US investment banks, and seven of the top ten Japanese banks doing business in the US. In the era of the corporate raider and the leveraged buyout, it is recognized as the preeminent merger and acquisition practice, involved in most of the large merger and acquisition transactions of the last decade. Long involved in international negotiations and dealmaking, it is beginning to assert a physical presence overseas, with offices in Tokyo and London.

Not surprisingly, an operation of this scale is heavily automated. An indication of just how big Skadden, Arps is can be gleaned from the fact that the wordprocessing/document handling system installed in each of its offices, including overseas, is Atex, which made its reputation as the largest supplier of publication systems designed to connect together hundreds of journalists and editors at city and national newspapers. Skadden, Arps selected Atex because, at the time, it offered the unique backup feature of automatically storing all documents on two separate machines. The choice of Atex, however, was not obvious; only about a dozen law firms use the system.

"What we were looking for was total redundancy," explained Earl Yaffa, Skadden, Arps managing director. "We wanted to make sure that we were never able to *not* produce because the system was down."

And the Skadden, Arps Atexes are never down. All Skadden, Arps offices run 24 hour wordprocessing operations, and extra demand is shifted around by high speed 9600 baud modems. The New York office regularly has 70, 80, sometimes as many as 100 wordprocessor operators at work on the night shift, producing a staggering 35,000 double-spaced pages a day.

"Wordprocessing is only part of the picture," noted Vinnie Loccisano, director of wordprocessing and PC development "Laser printers have also had a major impact as well. We already have 6 DTP specialists – we call them typesetters – on staff to design documents with charts, graphs and graphics."

Earl Yaffa: This technology is a revolution in our ability to deliver legal services – a revolution in terms of speed, production and service to the attorney, which means speed and efficiency to the client."

A revolution not without its doubts. The opening of Skadden, Arps office in Tokyo brought the decision to standardize on Atex into question. Doubts about Atex surfaced not because of any difficulties connected with transferring wordprocessing demand back to the New York offices – London had been shifting as many as two hundred pages a night with no problems – but because of the difficulty of finding trained Atex operators.

"We debated about whether to shift to IBM," relates Bruce Buck, senior partner in the London office, "but decided, wisely, I think, to stick with Atex."

Skadden, Arps is, however, involved in modernizing and enhancing its Atex system. Since Skadden, Arps selected its system, Atex was bought by Kodak, and its legal product spun off into a separate operation called Kodak Legal Systems. Skadden, Arps is currently working with Kodak to make its system more flexible and able to run on PC platforms (Atex is mini- and mainframe-based).

"We want to make sure the system is easier to grow," states Earl Yaffa. "We want lawyers to be able to do Atex on their PCs as well as a lot more."

Another level of automation at Skadden, Arps involves access to information services provided mainly by Mead Data Central's Lexis/Nexis. Lexis/Nexis is a legal and information database and is available in all offices, including London and Tokyo. Lexis/Nexis contains everything from Securities and Exchange Commission 10-K Yearly and 10-Q quarterly reports, to the Kansas Administrative Code to the BNA Toxics Law Daily.

"Lexis/Nexis isn't the only database used at Skadden, Arps," Bruce Buck notes. "The firm is so big, we keep a client database to make sure one office doesn't sign on clients that are competitors to clients in another office."

A firm operating with this level of document processing automation should be looking toward high tech solutions to language too, right? Wrong.

Skadden, Arps main tool in attacking the language problem isn't machine- or computer-aided translation but another database: an inventory of language skills possessed by the firm's lawyers, paralegals and staff. For an American law firm, Skadden, Arps has a surprisingly large number of multilingual lawyers, who can speak everything from Afrikaans to Russian. And these language skills are put to use, since Skadden, Arps considers it an advantage to use local languages. The head of its Japanese office speaks fluent Japanese, for instance.

"Lawyers are assigned to clients on the basis of language," states Bruce Buck. "It puts clients and adversaries at ease. Having said that language is important, I would point out that language is not an overriding criteria because most international legal business is conducted in English."

All major contracts are in English. All big deals are negotiated in English. Little wonder that for Skadden, Arps, 1992 doesn't seem like such a big deal.

"It's exciting times in Europe," Bruce Buck notes. "The legal situation is changing profoundly, and change is always good business for lawyers. But 1992 itself is just another facet of the internationalization of commerce, of the shrinking of the world. It's no big problem for us, because English is already the lingua franca of law."

As a native-English speaking law firm, does that give Skadden, Arps an advantage?

He breaks into a smile. "Of course. All lawyers we hire, whether in Belgium or Japan, must speak excellent English. But it's also an advantage to European lawyers who speak English, and an increasing number of them do – partially because of programs like we have at Skadden, Arps where foreign lawyers can intern at our firm."

Naturally enough, as Skadden, Arps looks to the future, the plans call for even more automation. The next databases to become available on line to its lawyers will be Skadden, Arps internal databases. Soon lawyers will be able to access extensive information about clients, cases and negotiations.

Earl Yaffa, "As more and more younger lawyers who've been using PCs regularly get into the firm, we'll be seeing increased PC usage and will be approaching the ultimate goal of a PC on every desk."

Levi Rizetnikof *is LT's correspondent at large.*

MEDIA

Hachette: Match

Match ado about Nothing?

By Andrew Joscelyne

Were you among the privileged who picked up one of the 100,000 half-kilograms of pre-recycled glossy paper from your newsstand at the beginning of last December, under a name you thought you knew already – "Match" – but printed in your very own language?

Like "wagon-lit" or "espresso" or "Autobahn," Paris Match is one of those names that somehow conjure up a notion of Europe long before daytrips to Brussels or bunfights over agriculture policy. Indeed, its beginnings go back to 1938, when an uninspired old sports magazine called Match was revamped as the weekly picture mag we know today.

NO RIFF-RAFF PLEASE

Match is now poised to strike again, having cast off its Parisian anchor – and hopefully its twice-a-month cover photo of the late Romy Schneider – but nonetheless devised and designed in the Champs Elysées offices of the Filipacchi magazine publishing empire and aimed at the whole of Europe. In five languages.

Your hefty number zero was revealingly called Match International in the original French. This was shortened rather inconsistently to Match British (a very Franglish construction), Match Deutsch, Match España, and Match Italia in the "translated" editions.

The money for the project was put up by Daniel Filipacchi, publisher of such glam mags as Elle and Femmes, and US publishing giant Time-Life Inc. The editor: current Paris Match chief, Roger Thérond.

While the project was still at the thinktank stage; rumor had it that the pan-European weekly would be another Life, packed with news pix and interviews torqued through five different syntaxes. What came out, though, at least in the launch number, was a top-end Vogue clone containing stories exclusively about what the editor's lead calls "the high achievers/plus grands entre nous/los grandes/più grandi/Grössten" and framed by quality photography.

As editor Thérond gushingly puts it: Match editorial policy is to focus on "the big names who advance the universe and who make the planet work" in the arts, politics, business and the science.

This entails presenting portraits in words and images produced by the major talents of our times. So if your tastes run to seamless intergalactic gossip about such universe-movers as Francis Bacon, Kim Bassinger (smoky lips by courtesy of top photog Greg Gorman) or Theresa Berganza *chez elle*, then Match International (or British, etc.) is – or might be? – for you.

MAATCHI and MAATCHI?

If 95% of Match International's original copy was written in French under two French editors-in-chief, the teams of translators seem to have gone overboard trying to suppress its Gallic origins.

Each language version had a coordinator plus a group of four or five translators and "adaptors" to handle the work, and they've kept to their brief. The British edition, for example, does indeed appear to use British and not US spelling conventions, despite

MULTILINGUAL NEWS 'N VIEWS FOR EUROPE: A ROUND-UP

Biochemists' congresses and computer engineers' electronic mail, space technologists' research papers and golf equipment manufacturers' catalogues. All offer living proof of the vexing fact: whether we like it or not, English is the lingua franca for more and more Europeans.

So why not do the obvious and use English for more ephemeral media, such as the daily news or business intelligence? Some press baron was bound to be attracted by the lucrative idea of offering printed news to all those bright young Europeans bored with their VCR's and satellite pap, yet used to handling international English. And Robert Maxwell was an obvious candidate.

THE EURO . . .

Thank you Cap'n Bob. The larger-than-life publisher of the UK's Mirror Group Newspapers is definitely planning to bring out his much-publicized pan-European periodical in English, though quite what form the over-obviously titled European will take is not clear.

Early versions of this thrilling serial spoke of a daily paper to be printed in London (where Maxwell already has extensive newspaper interests) and Paris (where he has been buying up a French printer) and then distributed to newsstands from Jutland to the Canaries, selling a million copies a day.

But the European's spring launch deadline has already come and gone. And more recent scenarios suggest that the old continent's eponymous rag might turn into just another monthly after all. The cost and complexity of pan-European circulation within hours of printing appear too demanding even for Maxwell's deep pockets.

. . . PAEAN

The potential target readership of commuting technocrats from any of the Community countries who use English as their second language, will remain the same whatever format is chosen.

For the traditional American or Brit working abroad or holidaying, there already exist two major English language dailies: the International Herald Tribune, published by the Washington Post and the New York Times in Paris; and the European edition of the British business paper, the Financial Times. Maxwell's declared aim is to reach a slightly younger reader, the decision-maker of the future: the 25-35 age-bracket fast-movers, at home in Glasgow or Arezzo. But will a hotshot in Thessaloniki have the same chance to buy as a *flâneur* in Nice? European, yes; EC, maybe.

The European's editorial policy is not to be a home-away-from-home version of its UK counterparts, as current English-language dailies are, but to focus specifically on European lifestyles, culture, business and sport.

It will be interesting to see how the writers adapt their style to the needs of "international" English-users. Will they be forced to jettison their quirky clever-dick Britishisms for the bland "bottom-line" yuppy-speak of the transfrontier smart-money boys?

It would sound like the obvious thing to do. But, according to observers, Euro-English of this sort won't attract the advertisers. Most companies gear their campaigns to national – and hence fairly specific linguistic markets. So there will have to be a minor revolution in the industry to justify panglossic ads – or will they just use pictures?

TRANSFRONTIER EX-PRESS – THE REST

Publishing in English is not the only way, however, of reaching a transfrontier and translingual market.

Other publications currently on sale in the Community have explored other methods of reaching their readers and will no doubt continue to do so after the creation of the single market. These tend, of course, to be specialist or professional periodicals. And very few of them go the whole hog, like the proposed Match International, and actually translate a given edition *in toto*. One that does so is the excellent literary quarterly Lettre Internationale, which comes out first in French – with articles themselves translated from English, Czech, Swedish, Polish, etc. – and then gets translated again. Into Italian as Lettera Internazionale, into Spanish as Letra Internacional, and into German as . . . well, Lettre Internationale.

In a wider context, the leading French international political monthly Le Monde Diplomatique now brings out an Arabic edition in translation, published in Geneva. It also publishes a Spanish edition, destined for the Latin American world and based in Argentina. There are no plans, however, to bring out versions in other specifically European languages.

The Guardian Weekly roundup of news for ex-pats and teachers of English looking for classroom material includes translated versions of articles from Le Monde and sometimes from other national newspapers.

Most other Euro-circulation mags try to include multilingual sections. Information Monthly, the "newspaper" for infopreneurs, for example, comes out in English, but always includes articles in French, Dutch and German about local events or issues, briefly summarized in English at the end.

The same approach is taken by Europ, the magazine of young European journalists published in Paris, which prints articles in English, French and German.

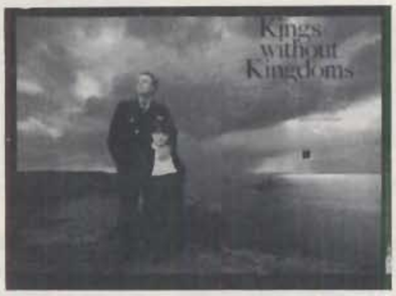
As for the successful Parisian news 'n fashion magazine Passion, it is primarily an English-language publication. But it regularly includes "back of book" articles in French, so could be considered bilingual, even when these French stories are not translated for the English reader.

the North American presence on the editorial board.

There are no indications of plans to cater for the European minor league languages. So the Danes and the Dutch will presumably settle for the English, as, no doubt, will the Portuguese, Greeks and Irish.

The adverts, on the other hand, are not translated, appearing identically in all five versions. They also underline Euro-stereotypes about which subjects are most "naturally" expressed in different languages. So you get Rolex, Dunhill and Cartier in suitably designer French; Johnny Walker, Philips, Air France and BMW in hightech English: and nothing in Italian, Spanish or German.

However, says Thérond: "In three or four years, advertising will be international. With our five-language formula, a major advertiser will buy space in anything from one to five versions, adapting his image to the culture in question as he wishes."



LOCAL HEROES

The editorial debriefing after this pilot number, however, has already led to a number of changes in the original plan, the most extreme of which, according to the Parisian gossip-machine, is the abandoning of the whole project as a non-starter.

Down at Filipacchi's, they are less pessimistic. Yes, the Art Director is to be changed, but no one can offer the name of Albert Velli's successor.

On a more structural note, whereas Match was originally conceived as (translated) international core copy accompanied by national supplements for Germany, Italy, the UK and Spain, there is evidence that the supplements are to be abandoned. The reason: probably financial, though the large amount of secrecy surrounding the project makes it hard to know for sure.

When – and if – Match does hit the newsstands in early summer as planned, it will not – says the editor – be the "European" answer to Life at all. Thérond doesn't even like the rather over-burdened word "European." He and the Match public relations machine prefer the tonier moniker "pan-European."

"Match is not going to be a magazine about Europe, even though Europe will be present in it both industrially and commercially. It will be a purely international magazine." Not surprising, then, that Fillipacchi's choice of a partner is a US magazine publisher.

What, in fact, seems to be behind the Match project is an attempt to resurrect the era of America's The Picture Magazine – the weekly dream machine of the pre-TV age – aided and abetted by high-quality photography and computerized magazine production technology.

Match will be a magazine for Europe, attempting to seduce its more discerning readers with the arts of "fine paper and masterly printing," offering them a supra-national product designed precisely to lift them above the trash values that most 1992 Euromerchants will be offering them.

Match will be a portrait gallery of the rich, famous and beautiful, not just in the fleshpots of Nice or on the sunbeds of Baden Baden. But from Acapulco to the Zambezi, from Vladivostok to Toadsuck, Arkansas. Europe will just be the market place where this glossy multilingual package will be peddled. For FF25 or £1.50 or 5000 lire or DM7.50 or 400 pesetas a copy. But please, no ECUs, we're *pan*-European.

MCCANN-ERICKSON THINKS GLOBAL, SELLS LOCAL.

One of the firms regularly called to assist Canon Europe in producing its marketing documentation is McCann-Erickson, a New York-based agency with offices in some 45 countries. Not that McCann-Erickson thinks of itself as a mere advertising agency.

"We advise our clients on commercial communication," is the way Niels Menko, director of the Amsterdam office, puts it.

Commercial communication for multinationals in the global village is now necessarily multicultural, which is why McCann-Erickson has offices in European, African, Asian and Latin American countries. Each office is equipped to design and implement campaigns tailored specifically for the local market. On the other hand, some clients, like Exxon or Coca Cola, believe that creating a uniform image and spreading a single message across all markets is the most efficient way to get the most advertising bang for the buck. For them, McCann-Erickson stations international coordinators close to their head offices, to ensure that the international campaigns that are implemented by McCann-Erikson's local offices are consistent.

Adaptation to local taste only can sometimes be as simple as changing actors in a TV commercial. As Menko puts it: "Actors have to look local. In sub-Saharan Africa, we wouldn't use a blond woman in a TV commercial, nor will we use a black woman in a German commercial. The characters have to look appropriate."

Merely changing actors, however, is often not enough. Even a well translated text may not get the message across. Take McCann-Erickson's Exxon – or Esso, as it's known in many countries – campaign. Menko: "The Germans have a completely different personal relationship to cars than, for example, the French." This attitude has to be reflected in texts used to promote Exxon products." And there are other considerations – like market position. Black and Decker, a household name in the US, is firmly entrenched on the home market. But in Germany, where Bosch is far more familiar, it needs a different campaign to reach potential buyers.

Each country, then, needs its own text, based on the guidelines provided by the international coordinator. This is why McCann-Erickson uses no translators – only full-blooded copywriters. That way they can be sure that all local sensibilities are accounted for.

Hightech tools to help localize advertising? Menko demurs, explaining that the amount of text that has to travel between local offices does not justify the investment in hightech tools. But more importantly, even the most sophisticated machine translation facilities couldn't replace the creativity of the copywriter.

Marie-Claire Dassen

While the project was still at the thinktank stage, rumor had it that the pan-European weekly would be another Life, packed with news pix and interviews torqued through five different syntaxes. What came out, though, at least in the launch number, was a top-end Vogue clone containing stories exclusively about what the editor's lead calls "the high achievers/plus grands entre nous/los grandes/più grandi/Grössten" and framed by quality photography.

ICL

ICL used to bark at the world in English. That was until the British flagship computer maker sensed change on the horizon and hastened to get multilingual. Its goal: to conquer the European single market. In the process of localizing its software for the continentals, cultural subtleties have been not the least of its concerns.

Surprisingly lowtech localization.

By Richard Sarson

Take, for example, ICL's sales brochure for its UNIX-based Office Systems range of software.

The original English drips with "critical success factor-"type buzzterms. The French, however, prefer their management-speak cozier and stress the software's user-friendliness, or *convivialité*. ICL's French employees even coined the catchy *conviviatique* – analogous to *informatique* – to express the joys of a friendly user-interface.

In a UK English manual, the style can be chatty. And that goes down well in Norway, Denmark, Benelux and Spain, too. But too much informality would be thought flippant in straight-backed Germany or Sweden, where a precise, deadpan style is appropriate.

BORN-AGAIN POLYGLOT

Of course, ICL wasn't always such a Euro-boy-scout.

Eight years ago, the company was strapped for brass and sacked 5,000 of its employees. Three of these unfortunates were from a sales team handling multinational companies, and between them they could handle Arabic, French, German, Hebrew, Hindi and Norwegian. Coincidentally, those of the team who escaped the axe were all stalwartly monoglot.

When one of the newly redundant souls pointed out that the company might regret losing his linguistic skills – and as a parting shot quipped to the personnel chief that "ICL should change its name to Anglophone Computers" – he received the unsmiling reply: "But you must know by now that ICL is an English-speaking company."

Well, an awful lot has changed in the intervening eight years.

In April 1988, when Alan Roussel became deputy chairman of the company's newly-formed European Strategy Board, his first directive was that all senior staff receive training in foreign languages.

The second was to persuade ICL to fund a chair at Bath University's School of Management, dedicated to the study of information technology in Europe, with input from the university's School of Languages. Roussell realized that the company would be lost in the Single Market unless it shrugged off its monoglot past.

EURO-STREET-CRED

There's no doubting the company's determination to do so. ICL has embarked on several cooperative initiatives in Europe, and has been dutifully playing the model European for a number of years. Its previous chairman, Rob Wilmot, took part in the "EC Round Table," with representatives from other European computer companies.

It was the Round Table that urged the EC into starting the ESPRIT, BRITE and RACE research projects. And in 1984, ICL, Siemens and Bull set up the European Computer Research Center in Munich, for the purpose of developing Fifth Generation languages for Europe.

Since 1985, ICL has been a prime mover in the European drive towards a standard environment for UNIX-based applications. In that year, the X/Open initiative was founded, dedicated to this goal. The company and its partners were hoping to break down barriers between the self-contained worlds of IBM's, DEC's and ICL's own proprietary operating systems.

> **Since translators, all of whom are native speakers, can get *frightfully* anglicized after too long in the UK, staff are continually rotated to and from European subsidiaries.**

ICL even made the conscious decision to "de-emphasize" European sales of large mainframes running under these "closed" proprietary systems, investing its efforts instead in the "open" Unix-based DRS range (originally called Clan) of multiuser minicomputers.

This was the first ICL computer specifically aimed at the continental market, and provided the company with its first taste of producing documentation in all the major European languages.

NO SPEAKA IBM

In mid-1987, ICL set up its Office Power Translation Project in Bracknell (Herts.), dedicated to centralizing and integrating translation into the production of user documentation.

Since then, a 60-strong team of writers, graphic designers and translators has been producing manuals in eight separate languages, using the company's own Office Power publishing software on a DRS network.

The principle of ICL's approach to integration is to use the same layout and artwork for all manuals, thus avoiding having to redesign them for each language. For this reason, the preparation of the text remains separate from the layout. And overlaying the text onto the layout is performed relatively late in the process.

In addition, to accommodate the extra space that other languages require – German and French in particular – the English original purposely allows for large areas of "white space."

Terminology management is an utmost human priority in the translation process, and managing the glossary an especially onerous task. Consistency in choice of computer-speak is crucial. Translators must, for example, make sure they use ICL terms – and not, say, IBM – since computer companies are almost as touchy about terminology as they are about "look and feel."

Translators involved are given up to six months' training in company terminology and technical background, and technical writers and translators collaborate wherever possible.

COME ON EUROPE

Since Office Power has been in use, the team has written 30 separate documents and translated 1.5 mn lines of source code into eight languages. The time taken for individual documents varies from around two months for a manual and one month for a sales brochure.

Since translators, all of whom are native speakers, can get *frightfully* anglicized after too long in the UK, staff are continually rotated to and from European subsidiaries.

Mike Wade, marketing and communications manager of the Office Systems Division, finds sales documentation much harder than technical manuals. The reason is cultural, not technical. Customers have varying senses of propriety, and style is very important.

Wade is convinced that the integration of writing and translation gives ICL's product a competitive edge in the trans-European market.

No terminology management software or computer-aided translation are used. Organizational skills rather than technical wizardry are the key cards in their game. So equipped, the team is confident that they can tackle anything that the Single Market will throw at them.

"BARK BARK"

Richard Sarson *is a London-based freelance writer.*

Philips Kommunikations Industries

When the liberalization of the Bundespost's sourcing regulations forced West German Philips Kommunikations Industrie AG (PKI) to get serious about exports, the company wasn't slow to take its message worldwide.

By Ralf Kohlrausch

The effort paid off, and the Nürnberg-based company, a Philips NV subsidiary making transmission and switching equipment, soon found itself with enough foreign orders to take on eight fulltimers to handle the accompanying translation load. But mere mortals couldn't keep pace with the new-found translation demand. So last year, PKI took the plunge and invested in machine translation. The system they chose: Metal.

"Why Metal, and not Logos or Systran?" asked LT's Ralf Kohlrausch. For that matter, why not wait for Philips NV's own Rosetta, due to be commercially released by 1991?

Imagine an intelligent mini-based hardware-software system that can receive a German-language paper manual in its scanner, have the computer rattle its bits, and output a perfectly translated and digitized English-language manual on a laserprinter? Sounds too good to be true. "But," says Patrick Little of Philips Kommunikations Industrie (PKI) in Nürnberg, West Germany, "it almost works that well." PKI of is one of a small and select band of commercial Metal users - and a very recent convert to high volume translation.

"Until eighteen months ago, our main customer was the German Post Office. Not much demand for translation there – everything being done in German. And whatever did have to be transferred into other languages was usually given to commercial translation companies."

But as one big order – the digitization of the German phone network – was approaching completion, PKI needed no reminders that the liberalization of the Bundespost's equipment sourcing regulations would mean that tenders for further contracts would be invited from all over the EC. The days of the Bundespost's cozy arrangement with its exclusively German suppliers were numbered.

PKI braced itself to hunt for orders worldwide. And with success – especially in the developing world. Large contracts were acquired in India and the People's Republic of China. But rising exports meant a corresponding increase in the company's requirement to translate manuals, contracts and technology transfer documents.

"It was a large order from India – which gave us nine months to translate 6,000 pages into English – which directly induced us to look into machine translation. Our eight inhouse translators just couldn't make the deadline." So the PKI team started to look into the possibilities. When they checked the available computer systems, they found Siemens Metal the best of the bunch.

"Logos, for example, will only let you lease their system for three years. You can't really invest in Logos and further develop the glossaries and source code yourself, since the whole thing never becomes your own property. And Systran is purely online – which gives you no control whatsoever. As for Philips' Rosetta, being developed in Eindhoven, it won't be on the market till 1991. And Little and his team needed machine translation now.

THE METAL PEOPLE

What Metal offers is an integrated documenting and machine translation system – which you can buy for US$140,000, plus an extra $55,000 for the software. So in September 1988, PKI decided to try it out for a year. They bought the hardware, an MX-2 minicomputer with four terminals and a Symbolics LISP machine, while the software (German-to-English) was provided free of charge for the period of testing. User training was taken care of by Siemens.

PKI's newly formed translation department, with a current fulltime staff of eight, received an initial one-week crash course in Metal, then worked with the system for six weeks. This was followed by another week of training." And when problems do arise, there is a constant hotline to Metal's developers in Munich. Tips and improvements are passed along this line in both directions.

"We've made several suggestions for improvements to Siemens," says Little, "which we are assured will be incorporated into Metal's next version – which is supposed to be available in June this year." When a new PKI product is to be exported, the entire technical documentation, contracts, etc., are handed to the people whom the office wags like to call the "Metal people" – most of them being women – who then take page after page and feed them into a scanner. Metal then splits each document into a text file (ASCII) and a layout file. And while the latter is stored separately, the ASCII text is transferred to the Symbolics, where Metal checks the text for unknown words.

Patrick Little and his colleagues then rack their brains, or flick through vast quantities of dictionaries, for translations of unknown words, and key them in. The next step is Metal's automatic sentence-by-sentence translation, which after proofreading and eventual corrections, is reunited with the original layout file.

Result: a perfect, ready-to-use document: same text, same layout as the original – just another language – all output by a (preferably laser) printer.

> **"There's some people in Nürnberg being buried by a translation load, *Man of Metal* !!"**

INTELLIGENT?

Theoretically, Metal could handle 200 A4 pages per day. But human word input and proofreading still slow things down.

"Metal is supplied with roughly 90,000 entries in its electronic dictionaries – which is a good start," says Little. "But of course, it can't know all the technical expressions, names and so on that we use in our business.

"We have to train its 'artificial intelligence,' so that it won't translate, say, the German city of Darmstadt into 'bowel town,' or the technical termTastverhältis ('pulse duty factor') as a 'touching relationship.'

To get the highest possible speed out of Metal, PKI has recently devised a three-step program. First, they're standardizing the terminology. Second, they're making all new texts available in machine-readable form. And third, since today's scanners and optical character recognition (OCR) software can't read microfilm printouts, the company's entire archives are being rekeyed on PC's. In addition, the hardware has also been improved. "We found our original MX-2 with its four terminals to be a bit slow for our demands. So we've now upgraded to a more powerful MX300/20 with eight terminals," says Little.

"The next step will be to incorporate desktop publishing into the system and make it work with our Sun workstations, so that we'll be able to import text directly into Metal."

After the first six months of use, Patrick Little is impressed with his new metallic colleague. "We're looking forward to getting our hands on the next Metal program, which will allow us to work in the other direction. That is: English-to-German.

"So far, our experience has been that the more standardized a text is, the better the Metal translation will be. For example, blueprints are much easier to work on and need much less proofreading than system descriptions or marketing documents. "Text in which opinions are expressed, such as conference protocols, business reports or press information, are still too complicated for Metal."

STAND UP LITTLE MAN

"When it comes to individuality, the human being will never be beaten by a machine," says Little. "But with every translation we do on Metal, we expand its internal dictionary, thus improving its ability to handle more and more complex texts.

"What we really like about Metal is its user-friendliness. None of us here had had much experience with electronic dataprocessing. But even so, we didn't have too many problems. "Most were of the kind that you can laugh about afterwards. For instance: during the log-in procedure, the computer asks questions and offers the answers Y, N and P.

"While Y and N were obvious, we all thought that P stood for 'Perhaps.' We were a bit deflated when it turned out to stand for 'Proceed.'"

Ralf Kohlrausch *is LT's new German correspondent*

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In the next issue of LT

State of the Art

Our sure-to-be-controversial picks of the best products for wordworkers, in each of the categories we cover.

Available 1 July

CLASSIFIED ADVERTISEMENTS

LT / Electric Word's classified section is one of the best and most economical ways of reaching more than 30,000 language professionals, 30 percent of whom are in North America, 30 percent in the UK, 30 percent in Europe, and the other 10 percent primarily in the Far East.

TEXT CLASSIFIEDS

Please indicate which section you want your ad to appear in:

○ Products Offered: ○ Software ○ Books ○ Hardware
○ Distributors Wanted
○ Services Offered: ○ Translators ○ Interpreters ○ Editors
○ Text Processing (WP, DTP, etc.)
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○ Other (specify)________________
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○ Situations Wanted
○ Other (specify) ________________

Your message
(10 word minimum. Telephone and fax numbers count as two words, as do box numbers. Postcodes count as one word.)

Payment:
Prepayment by bank check or international money order in pounds sterling, Dutch guilders, or US dollars **is required.**

Cost per word varies according to frequency:

	Dollars	Pounds	Guilders
○ 1 time insertion	50¢	£0.33	H*f*1.00
○ 3 times	45¢	£0.30	H*f*0.90
○ 6 times	40¢	£0.26	H*f*0.80

Payment enclosed:

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= Cost per insertion: ________
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Please send camera ready copy in these dimensions if you want to include graphics of any kind

Width	Height		
○ 1 column (1 unit)	○ 2.5 cm (1 unit)	○ 12.5 cm (5 units)	○ 22.5 cm (9 units)
○ 2 col. (2 units)	○ 5 cm (2 units)	○ 15 cm (6 units)	○ 24 cm (10 units)
○ 3 col. (3 units)	○ 7.5 cm (3 units)	○ 17.5 cm (7 units)	
○ 4 col. (4 units)	○ 10 cm (4 units)	○ 20 cm (8 units)	

Classified display is counted in units of 2.5 cm (approximately 1 inch) per column. There are four columns in this section, each 4 cm wide. The cost of a one time insertion is $50 (or £33, or H*f*100) per unit (2.5 cm per column); three times will cost $45 (or £30, or H*f*90) per unit; 6 times costs $40 (or £26, or H*f*80) per unit. Thus, a one column ad that is 5 cm high, inserted once, will cost 2 (units) times $50, or $100. A two column ad 7.5 cm high will cost 3 times $50 per column or $300. **Prepayment** by bank check or international money order in UK £, US $, or H*f* **is required.** Contact Advertising Director Jane Metcalfe for further information and rates.

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FOR SALE - *Dictionnaire alphabétique et analogique de la langue française* par Paul ROBERT: six volumes (1951-1964), supplement (1970). Offers to Shevlin, 25 Tothill House, Page Street, London SW1P 4DG. UK.

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CALENDAR

MAY 1989

2-4 — SPEECH TECH '89
New York City. Voice input/output applications conference and exhibition to be held at the New York Penta Hotel. Organized by Media Dimensions, Inc., 42 E 23rd Street, New York, NY 10010 U.S.A. Tel: +1 (212) 533 7481

4-6 — 5th INTERNATIONAL CONFERENCE ON FOREIGN AND SECOND LANGUAGE ACQUISITION
Katowice, Poland. Info: Janusz Arabski, University of Silesia, Institute of English and General Linguistics, Bando 10, 41205 Sosnowiec, Poland.

9-11 — NATIONAL ONLINE MEETING
New York City. Tenth anniversary conference and exhibition covering electronic information products and services. Integrated Online Library Systems '89 is billed as a "conference within a conference." Organized by Learned Information, Inc., 143 Old Marlton Pike, Medford, NJ 08055 U.S.A. Tel: +1 (609) 654 6266.

15-17 — 6th ANNUAL OPTICAL INFORMATION SYSTEMS CONFERENCE
London, England. Europe's biggest optical information and image management conference and exhibition, taking place at the Novotel Hammersmith International Centre. Info: Meckler Ltd., Grosvenor Gardens House, Grosvenor Gardens, London SW1W OBS, U.K. Tel: +44 (1) 931 9985.

16 — SEMINAR ON JAPAN INFORMATION SOURCES
Sheffield, England. Organized by the British Library Japanese Information Service in collaboration with the University of Sheffield and the Japan Business Services Unit, to be held at the Health and Safety Executive, Sheffield. Info: Marketing and Public Relations, Science Reference and Information Service, 25 Southampton Buildings, London WC2A 1AW, U.K. Tel: +44 (1) 323 747.

16-18 — CEPS '89
Chicago, Illinois. Corporate Electronic Publishing Systems Show held at McCormick Place. Organized by the Cahners Exposition Group, Tel: +1 (203) 964 0000.

17-19 — 9th ANNUAL CONFERENCE ON ROMANCE LANGUAGES AND LITERATURES
Cincinnati, Ohio. Call for papers. Info: Danielle Raquidel, Conference Chair, Dept. of Romance Languages and Literatures, University of Cincinnati, Cincinnati, OH 45221-0377, U.S.A

22-26 — FACE TO FACE
New York City. Formerly known as Magazine Publishing Week, this biannual event will take place at the New York Hilton. Sponsored by Publish!, Folio Magazine and Hanson Publishing. Contact Hanson Publishing, P O Box 4949, Stamford, CT 06907 U.S.A. Tel: +1 (203) 358 9900.

28-30 — ANNUAL CONFERENCE, CANADIAN FRENCH TEACHERS' ASSOCIATION
Ottawa, Canada. Theme: "Bicentenary of the French Revolution." Info: Fleurian Château, 15 Fairbairn, Ottawa, K1S 1TZ, Canada.

29-1 JUNE — ICO '89
Sainte-Foy, Quebec, Canada. International Workshop on Cognitive Informatics Applied to Organizations. Organized by GIRICO. Info: Prof. Bernard Moulin, Colloque ICO '89, Université Laval, Département d'Informatique, Sainte-Foy, Québec G1K 7P4 Canada. Tel: +1 (418) 656 6680.

JUNE 1989

5-9 — 10th FINNISH SUMMER SCHOOL OF LINGUISTICS
Jyväskylä, Finland. Theme: Systematic Linguistics. Info: Salme Vaaraniemi or Kari Sajavaara, Department of English, University of Jyväskylä, 40100 Jyväskylä, Finland.

6-10 — JOINT INTERNATIONAL CONFERENCE OF THE ALLC AND THE ICCH
Toronto, Canada. The first such collaboration by these two major international groups (the Association for Literary and Linguistic Computing, and the International Centre for Computing in the Humanities). Working languages will be French and English. Call for papers. Info: Professor Ian Lancashire, ALLC-ICCH Conference, Centre for Computing in the Humanities, University of Toronto, Toronto, Ontario, Canada, M5S 1A5. Tel: +1 (416) 978 4238.

12-14 — THE NEW DESIGNER
New York City. A computer graphics show taking place at the Grand Hyatt Hotel. Info: Jeffe Corp. Tel: +1 (914) 741 2850.

12-16 — INFORMATION STORAGE TECHNOLOGY COURSES
Maastricht, the Netherlands. A series of courses in advanced technology held in the Maastricht Congress Centre organized by CEI-Europe and Elsevier Publishers. Contact Gerda Wolzak, CEI-Europe/Elsevier, Box 2400, 1000 CK Amsterdam, NL. Tel: +31 (20) 586 2600.

12-16 — 16th INTERNATIONAL SYSTEMATIC CONGRESS
Helsinki, Finland. Focus is on developments in systematic and other functional theories of language, developments in areas of stylistics, and issues in applied linguistics and foreign language teaching. Info: Dr Eija Ventola, University of Helsinki, Fabianinkatu 26, 00100 Helsinki, Finland.

13-15 — LONDON LANGUAGE SHOW
London, UK. The first major UK exhibition of language training, services, equipment and facilities for business. Barbican Exhibition Centre, London. Info: Profac Limited, Victoria House, Vernon Place, London WC1B 4DH, U.K. Tel: +44 (1) 242 3621.

19-20 — INTERNATIONAL CONFERENCE ON THE LANGUAGE INDUSTRIES
Strasbourg, France. Sponsored jointly by the Council of Europe and the European Commission. Contact DG XIII, Bat. J. Monet, L-2920 Luxembourg. Tel +(352) 43011.

20-24 — INTERNATIONAL CONFERENCE ON MINORITY LANGUAGES
Leeuwarden, the Netherlands. Held at Fryske Academy, Leeuwarden. Theme: Comparative Research on Minority Languages and Development of Theories. The conference will deal particularly, but not exclusively, with the minority languages of the Netherlands, Great Britain, Ireland and the Nordic Countries. Info: 4JCML, Fryske Academy, c/o Durk Gorter, Doelestrjitte 8, 8911 DX Leeuwarden, Netherlands.

26-29 — 27th ANNUAL MEETING OF THE ASSOCIATION FOR COMPUTATIONAL LINGUISTICS
Vancouver, Canada. Call for Papers. Info: Julia Hirschberg, ACL89 Program Chair, AT&T Bell Laboratories, 2D-450, 600 Mountain Avenue, Murray Hill, NJ 07974, U.S.A.

28-30 — INTERNATIONAL INFORMATION MANAGEMENT CONGRESS
Taipei, Taiwan. Focus on the latest document management technologies, including optical disc, desktop publishing and micrographics. Info: Mr. Phillippe Kaigre, Orcotech, Tel: +33 (1) 42 77 42 77.

29-2 JULY — MACWORLD EXPO ASIA
Singapore. The first Macintosh event to be held in Asia will take place at the Raffles City Convention Center, Singapore. Contact MacWorld Expo '89, 1181-B Chess Drive, Foster City, CA 94404, U.S.A. Tel: +1 (415) 341 2227.

JULY 1989

10-12 — MACWORLD EXPO '89
Boston, Massachusettes. The last of the three planned for 1989. Organ-

C Y B E R L E X

Yo! This is safe! Instead of language technology in action, here's some language in action : excerpts from The Go-Go Glossary, a collection of Afro American street talk that comes with the double CD-Audio publication Washington Go-Go Sound Attack *from BCM Records. (The booklet describes Go-Go as: "The place and the culture. Both the name and the sound have their origin in the sixties, when Go-Go was black America's general term for the soul disco. The Miracles' 'Going To A Go-Go', Ruth Baker's 'Batman At The Go-Go' and Matt Lucas's 'Baby You Better Go-Go' helped to institute the word in the inner cities. It fell out of fashion, but in Washington the word refused to die. It became the dance, a night on the darkened dancefloor, and finally the descriptive term for the city's self-contained funk circuit.") As ever, readers are invited to submit their own suggestions for inclusion in CyberLex, LT/Electric Word's leave 'em laughing spotlight on language technology in action.*

Try and find these on your CD-ROM dictionary:

Break Camp: To leave; to go.

Bumpin': It's bad; it's super-dooper; it's terrific. Used interchangeably with hittin' and holdin'.

Bamma: Someone who's dress (or action) is outdated but isn't aware of it; someone from the country (rural area) who has not adjusted to city life.

Crackin': Moving on someone to get to know them better; to put them down or play the dozens.

Good To Go: The ultimate approval; when something is hot and ready for action.

Holla at me: Call me; talk to me; come to see me.

Home Boy/Home Girl: Someone you're totally familiar with; someone originally from your neighborhood, school or hometown.

Mug: Your face; your facial features; your attitude according to your facial expression.

Numb To The Max: Totally overwhelmed by Go-Go music or heavy partying; Full blast.

Pumpin': Jammin' when GO-GO Bands elevate music to the maximum elevation.

Safe/That's Safe: Something that's allright, that's outstanding; i.e. "that's safe."

Say What?: When you're totally undecided; still deciding during the course of a discussion or a rap.

Take It To The Bridge: Going to the change in a song.

Yo': Hello; hi; hold on; wait a minute.

Young Ones: Cigarettes.

15 WAYS TO GET THE MOST FROM WORDSTAR

Reports of the death of WordStar have been grossly exaggerated. The latest upgrade (5.0?) proves that the old dinosaur is still alive and kicking.

New generations of computer brats might be cutting their teeth on the likes of WordPerfect, Word, and XyWrite. But your real old salts – with fond memories of a youth spent struggling to learn those whimsical control and dot commands – they've stayed faithful all along. 'Cos "if it hurts, it's doing you good."

LT/Electric Word asked David J. Clark to share a few tips on getting along with Auntie WS.

1. WordStar has added newspaper columns late in the game. And although they're a welcome sight for diehard WordStar users, a programmer's knowledge of the dot commands appears to be needed to use them successfully. Fortunately, most people use only one or two types of page layouts involving columns, and the process can be automated fairly easily.

The first step to creating columns is setting the left, right, and, if need be, paragraph margins for the columns. To create a custom ruler line for two columns, use WordStar's customization program, WSCHANGE. First, type WSCHANGE WS from the DOS prompt, then select D (WordStar), A (Page layout), and then E (Stored ruler lines).

Next, select D to edit the third ruler line (numbers 0-2 are useful preset ruler lines you probably want to keep), and then B (right margin). Subtract the gutter width you want (the space between columns) from your normal line width, and divide that figure by two, entering the result. (For US 8 1/2 by 11-inch paper, this would be 3 inches.) If you want to set a paragraph margin as well, select C and enter the size of the paragraph indent you desire. Now save your changes and exit WSCHANGE. The next time you want to set the column width for two columns, just insert the dot command .RR3.

2. To take our first tip one step further, you can create a shorthand macro that inserts the custom ruler line and then turns the column feature on, selecting the number of columns and the gutter width. This step is done within WordStar.

Press Esc-? to create a new macro, then type 2 in the Shorthand character field, then Two columns in the Description field. In the Definition field, type ^PM, then .RR3, then ^PM again, then .CO2*gutter width*, then ^PM. Each ^PM represents a carriage return, and only ^M will be visible in the field, which should look like this:

```
^M.RR3^M.CO2,gutter width^M
```

Next, press Return to end the macro sequence, and then answer Y to the prompt "Store macro changes on disk (Y/N)?" This may have seemed like a lot of work, but now all you have to do to enter the two-column format is press Esc-2.

3. One wordprocessing feature that is notably absent from the WordStar menu system is a print queue, a feature which allows you to specify several files to print in a certain order, instead of issuing a print command each time you want to print a document.

Fortunately, you can create a print queue easily enough using the command file technique with the Print feature. Open a new document and name it PQUEUE. Type in the following dot commands, taking care to press Return after each line.

```
.fi first file name
.pa
.fi second file name
.pa
   . . . and so on
```

Putting a C after the file name will pause and allow you to change disks. If you're printing page numbers, you may want to insert a new page number before the .fi command, using .pn followed by the page number. Otherwise, all files will be numbered consecutively as one document.

4. If you often print documents like form letters or contracts that have boilerplate text with only items such as names or prices changed, using the set variable dot command (.SV) can save you time. Place the variable within your master document enclosed in ampersands, like this:

> . . . at which time the *&consignee&* agrees to provide all merchandise within 7 working days.

You can have several of these variables. For each one, type .sv followed by the variable name, and then the information specific to your current document. For our example, we would enter

```
.sv consignee, Joel Selvin
```

and the name Joel Selvin would appear in place of &consignee& throughout the document when merge printed.

5. Using a similar procedure, you can specify input to a variable as you print and eliminate the step of opening the master document. Insert variables enclosed in ampersands as in the previous tip. At the beginning of the document, insert the following dot command for each variable:

```
.av variable
```

Save the file and merge print the document (M from the Classic Opening menu or the File pull-down menu). A beep will sound and the message PRINT WAIT will appear on the screen. Select merge print again, and the first variable will appear followed by a question mark. Type in the information, and then press Return.

The next variable will appear, if any. Type in the information for the next variable and press Return again.

When data has been entered for all the variables, the document will be printed. If you want to give a clearer prompt than just the variable name and question mark, insert the prompt enclosed in quotes before the variable, for example:

```
.av "Enter the customer's surname here: ",surname
```

6. WordStar has traditionally excelled in allowing users to customize and patch the program directly. Many useful patches can be downloaded from your neighborhood BBS (such as mouse drivers and screen fonts), and can be easily installed using the Auto patcher feature.

Before beginning, it is a good idea to make a backup copy of WS.EXE in case you decide you don't want the patch. Next, type WSCHANGE WS from the DOS prompt, select E (Patching), A (Auto patcher), and then enter the file name (including drive and path if necessary) of the patch.

7. If you constantly switch between a couple of fonts in your work, you can assign them as your normal and alternate fonts and thereby save many keystrokes.

At the DOS prompt, type WSCHANGE WS and then select B (Printer), D (Printing defaults), then G (Normal character font) or H (Alternate character font), then select the letter next to the desired font in the list displayed on your screen. Now save your changes and exit WSCHANGE.

The normal font will be the one used when no font has been selected. The alternate font will be the one used when you press ^PA in a file; the code <ALTERNATE> will be displayed on the screen. To change back to the normal font later in the document from the alternate font or any other font chosen, press ^PN.

8. If you want to make font switching quick and easy for a number of fonts, use the shorthand macro feature. As

In discussing these areas, the authors follow the approach of taking human behavior and human interaction as the starting point for designing and evaluating conversational systems.

Part One opens with a pleasant-to-read introductory chapter by John Waterworth on speech-based information technology and psychological theories of speech perception, with particular attention to their mutual influences. This is a sound introduction to each of these fields for the interested layperson.

In the three subsequent chapters, Mike Talbot introduces the reader to existing products and methods of speech technology research. Again, there's a nice introductory chapter, certainly of interest to the absolute layperson. For anyone not entirely lay, however, it contains very little new information. And by this time, the reader is almost halfway through the book.

Part Two consists of two chapters. The first describes one particular aspect of assessing the quality of synthetic speech, namely the development of a metric for intelligibility, with specific reference to work done by the authors at British Telecom. This chapter has much of the character of a research paper – interesting as such, but why should the only chapter with technical substance be devoted to this matter?

It's as if the main issue to be addressed when designing a speech system were how its performance can be measured. This emphasis is peculiar and unfortunate. The speech part of the book closes with a short, ten-page chapter discussing the differences between human speech production and automatic speech recognition, describing – again – a study on this topic performed at British Telecom.

PERIPHERAL

In their introduction, the authors characterize Part Two as follows: "Having considered some problems and issues with the actual technology of speech-based systems, what else do we need to produce a truly conversational computer?"

Unfortunately, in Part Two, the authors do not live up to the expectation this announcement raises.

The central question in designing a truly natural-language conversational system is – obviously – how a computer can be made to adequately understand a user who expressed himself in natural language, whether speech or text. In a book of this kind, then, you might expect a discussion of research on language understanding, the interpretation of sentences and texts, computational approaches to discourse semantics, dialogue pragmatics and so on.

But you find almost nothing of the kind. Instead, there's a very superficial introduction to the philosophy of speech acts and conversation analysis, knowledge representation techniques in AI, parsing methods in computational linguistics, text generation, and interaction monitoring. Most of this material is peripheral to the design of language understanding systems.

In addition, the work discussed in relation to the topics chosen by the authors is often not the most interesting. For example: When it comes to research on dialogue organization, the authors give most attention to conversational analysis. This is a questionable choice in view of the fact that, whereas the strength of this approach is that it accounts for empirical data, its weakness is that it hardly seems to lead to the construction of the explicit models needed for the design of intelligent, rule-based dialogue systems.

The most promising alternative is the use of speech act theory. However, the section on this topic hardly goes beyond sketching Austin's and Searle's philosophy concerning the use of language as a form of rational action. The interesting technical form this approach has obtained through AI research by Perrault, Cohen, Appelt, and others is not even mentioned, let alone the attempts to use it as the basis for actual conversational systems such as LOKI or TENDUM.

Another example is the discussion of parsing. The authors completely miss the most interesting development that has taken place in recent years, where work by linguists within the framework of enriched ("generalized," "augmented") phrase structure grammars converges in very interesting ways with the development of the methodology of logic programming.

The emerging "unification-based" grammars and their parsing technology should not be allowed to be absent from a discussion of parsing in a book which appears in 1987.

DISAPPOINTMENT

One question that kept creeping up on me while reading this book was: "What, really, is its purpose? Who's supposed to read it? Who's supposed to learn what from it?"

It doesn't explicitly claim to be a review of language technology, or of speech technology, or of research on conversational systems. And presumably, it isn't intended to be a survey work, given its eccentric choice of topics within the areas it covers.

On the whole, a disappointing book. Though it's pleasantly written and touches on a variety of interesting questions, its authors could have produced a much more interesting book if they had selected their material more carefully.

Prof. Dr. Harry Bunt is General Director of the Institute for Language Technology and Artificial Intelligence, Tilburg University, the Netherlands.

SUDDENLY IT'S DISCOURSE ANALYSIS

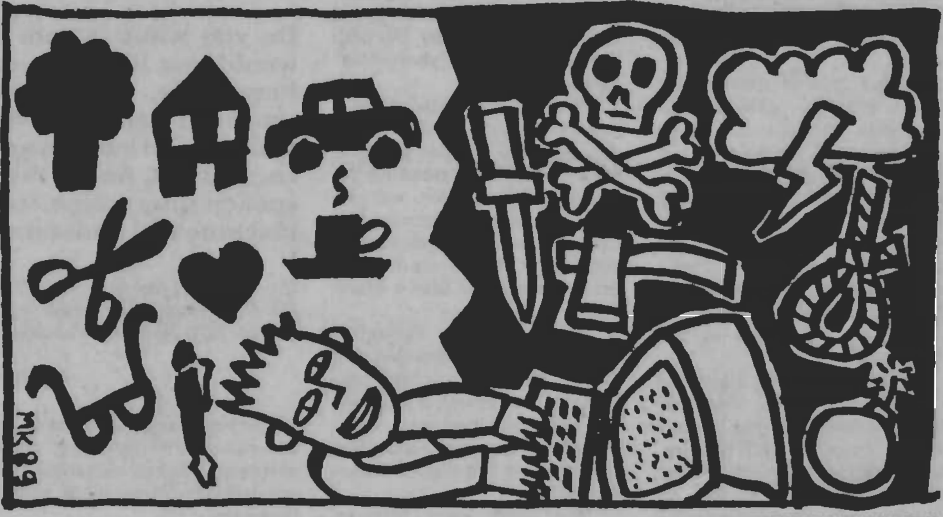

ILLUSTRATION BY MAX KISMAN

"Text Cohesion in Translation," Bart Papegaaij and Klaus Schubert (Foris Publications, Dordrecht, Netherlands / Providence, RI, USA, 1988) Price: US$15

By Claude Bédard

Most second generation MT systems have never attempted to cross sentence boundaries, having their hands already full with sentence-level grammar. They therefore typically translate texts as if they consisted of bunches of unrelated sentences. (And most of them don't even do that particularly well.)

Of course, we all know that every text has its own organization and is filled with pointers that relate sentences and words into a broader picture, and that a proper translation should respect this fact. But then, how do we formalize this process for a machine?

This third book in an MT series, by two members of the Dutch-based DLT machine translation project, gives an outlook on how it *might* be done, drawing on the still scarce literature in the field of discourse analysis (aka text linguistics or text grammar).

The problems addressed in most detail by Papagaaij and Schubert are pronominal reference (finding the right

DAHLING! THIS'LL BEND YOUR POST-MODERNIST MIND!

ILLUSTRATION BY MAX KISMAN

Remember how we all lived so cozily in the postwar world? And then how things speeded up, and French philosophers told us how terribly post-modern we'd all become?

Now here comes Hans Moravec, roboticist and author of this short but mind-bending book, telling us how we'll soon be living (if that's the word) in a "post-biological" world.

The mind children of his title are the superintelligent citizens of that world – along with any humans beings who can take the pace.

"Mind Children: The Future of Robots and Human Intelligence," Hans Moravec (Harvard University Press, 1988). Price: US$25.40

By Wendy-Jo Naseler

In 160 pages of clean prose, peppered with personal anecdotes but shot through with the austere intensity of the visionary, Moravec takes us by the scruff of our necks and tells us how it really is in the research labs out on the leading edge of knowledge, and how it will be if his extrapolations come to pass.

Using a judicious selection of graphs to show trends in everything from comparative brain size, computer power and memory, and the cost of hardware per human equivalence up to the year 2030, Moravec plunges us straight from page one into the BIG picture.

As the transmission of information is slowly exteriorized from its original genetic squigglies and placed more and more often in various types of machines, our culture will eventually be free to evolve independently of the "limitations" of human biology – you know: sex, death and all that.

Our minds will be released from their annoyingly mortal coil and, like computer programs, be transferred to another medium, updated or even reprogrammed by some celestial hacker.

The problem-solving style that human intelligence has developed suggests to Moravec that we should abandon the Darwinian paradigm of blind mutation as the only motor for change, and instead pursue specific goals for improving our lot on a universal scale.

In six dense chapters – and three technical appendices – of the sort of state-of-the art science *faction* that only US writers know how to do, Moravec offers us the thought tools with which to grasp what is at stake if we want to embark on the trip.

With impeccable logic, we are led from current puny efforts in meccano-ing together nuts 'n bolts robots to the latest wrinkle in the famous Life program: simulating self-replicating machines, or "cellular automation." I found it a very rich brew to digest, but couldn't resist continually treating myself to another spoonful.

BOTTOM UP

Starting with robots – since Moravec reckons that robots with human intelligence will be "common in fifty years" – he charts a little recent research history on the opposition between AI and robotics in the modelling of human intelligence, illustrated with personal reminiscences from his own lab work.

AI researchers use a top-down approach, imitating human reasoning – "the thinnest veneer of human thought" – whereas bottom-up robot research started, under the

WP CHAMELEON

Timeworks claims that Beyond Word Writer "goes way beyond writing and editing text." Which is true: as well as functioning as a competent wordprocessor, it has some unique – even quirky – innovations. On the other hand, it slips up on a couple of surprising fundamentals.

BWW's most dazzling extra is its Mimic Mode, which makes it behave like other popular wordprocessors. Just select your favorite wp, and you activate a "habit-compatible" interface to immediately reconfigure all your keys to functions you're accustomed to.

Another innovation is the built-in shorthand function. This lets you type standard phrases, or even often-used industry-specific words, utilizing a two-letter code. The only drawback here is your (human) memory. As the list grows, you forget which two letters stand for what.

BWW has an ingeniously named "undelete" feature, known as a "3-Way Oops! Control," which, though not unique in itself, is very comprehensive and works very well to recover accidentally deleted words, sentences or paragraphs.

The package has three spellcheckers, with a 100,000-word dictionary and a user-defined personal dictionary. The word count feature counts words, sentences and "hard" words – and includes an ingenious Fog Index, or readability indicator. This way for the built-in style checker . . .

In the light of such relatively sophisticated lexical processing, it's curious that BWW's biggest shortcoming is its less-than-garrulous thesaurus, which is ignorant of such simple words as "although," "authorities," "experiments," "immediately," "tactics," "terrorism" and "unequivocally" – words taken at random from a single text.

Another flaw is the bookmark facility, which allows you to set a bookmark anywhere in your text to show you where you left off reading it. The marking and relocating work fine, but it's a bit disconcerting not to be able to see the bookmark onscreen.

Finally, when text is displayed onscreen, BWW doesn't make efficient use of the available screen width, because it's displaced to the right by an amount depending on the setting of the left margin. The text should begin at the left edge of the screen regardless of the margin setting.

Hardware requirements: IBM PC, XT, AT, PS/2 or compatible, with 512K of RAM. Price: US$199.95.

—M.R. Ratnagar

Timeworks, Inc., 444 Lake Cook Road, Deerfield. IL 60015-4919, USA. Tel: +1 (312) 948 9298

MY FIRST ENCOUNTER WITH ARTIFICIAL INTELLIGENCE

ILLUSTRATION BY MAX KISMAN

Having been hired as LT's editorial assistant, first thing I know is I get handed this typing tutorial program called "Mavis Beacon Teaches Typing," with a note that I ought to try it out and "maybe review it."

Irked at this implied slur on my typing skills, I whack the keyboard. The machine immediately BEEPs. A typing error! Intrigued by this prompt response, I plunge myself into a test of my typing skills. The electronic schoolmistress BEEPs continuously with disapproval.

Suddenly I'm behind the wheel of a racing car competing with British playboy/racing driver Anthony Smith-Corona. Every mistake I make gets BEEPed at, as my windshield gets caked with mud.

The machine rattles on. It compliments me, it asks me if I'm getting tired or upset, it gives me a good telling-off, and it BEEPs at me. It shows me graphs which tell me I get the ipper roght hand ruw moxed ip.

After several sessions with Mavis, I feel like Pavlov's dog without a stomach, like a clockwork orange willing to lick Ms. Beacon's grahnzy vonny boots if only she'll stop BEEPing.

Those sickening BEEPs have conditioned me to type perfectly. And that's what Mavis Beacon is: perfect. But don't let the entertaining, eyecatching graphics divert you. Mavis's soul is gyclorng obnoxious . . . yeah, right.

Versions available for Mac and PC/compatible, among others. Price: US$49.95.

— Adam Eeuwens

The Software Toolworks, 13557 Ventura Boulevard, Sherman Oaks, CA 91423, USA. Tel: +1 (818) 907 6789

AMI

WP FOR WINDOWS

No, Ami is not the code name for a new Commodore Amiga operating system. It's the result of a laudable attempt by Samna Corp. to give us something more to do with Microsoft Windows than just play Reversi. That is: give us a fully featured graphic-based wordprocessor with capabilities approaching DTP.

Those of you who have joined the Windows bandwagon because you love to play Mac on your IBM clone will be sad to discover, though, that the one feature that would really have us chomping at the bit – a real honest-to-god WYSIWYG wordprocessor – runs like a rheumatic snail.

In non-WYSIWYG mode, Ami cruises at comfortable speed, filling the gap between a simple WYSIWYG wordprocessor like the Windows freebie Microsoft Write and a heavy duty DTP application such as Pagemaker. Price: US$199

— Marcel Brugmans

Samna Corp., 5600 Glenridge Drive, Atlanta, GA 30342, U.S.A. Tel: +1 (404) 321 5006

VOLKSWRITER (CONT.)

people are still not interested in what a computer program thinks of their English.

At present, this new version cannot be recommended except to current Volkswriter users with a penchant for the untried. Price: US$340.

— Colin Brace

Lifetree Software, 411 Pacific Street, Monterey, CA 93940, USA. Tel: +1 (408) 373 4718

KNOWLEDGEPRO (CONT.)

The built-in programming language is fairly powerful, with many features that are useful for artificial intelligence programming. The language has functions for handling lists, backward chaining and recursion.

The basic unit used is the "topic," which can contain text, the value of a variable, or system commands. Topics can also have children and parents, and the text they contain can have hypertext links to other topics.

Furthermore, a form of backward changing is implemented which can find all the possible solutions when the value of a topic is evaluated. In this way, a problem can be expressed as a series of rules which are automatically evaluated to find the solution(s), rather like in Prolog.

NO PICS HERE

A major shortcoming with the version of KnowledgePro I reviewed is the lack of support for graphics and pictures. But KnowledgeGarden has announced a Graphics Toolkit, which will allow graphics images from PC Paintbrush to be incorporated into KnowledgePro knowledge bases.

However, KnowledgePro is so inherently text-oriented, that it is unlikely ever to be able to compete with programs like Guide. *I* can't help comparing KnowlegePro with HyperCard. This is probably unfair, because the two programs have very different aims. And HyperCard has a very simple language, while KnowledgePro is built around a powerful AI language.

But in some ways they have similar features. Both have a programming language that can be used to perform actions when items on the screen are selected, and both are designed to present information in a non-linear and intuitive way.

HyperCard is definitely much more slick than KnowledgePro, which could do with a lot more work on the user interface. But KnowledgePro does have a far more sophisticated language, which supports very complex and advanced applications, compared to HyperCard's endless notepads, personal organizers, and checkbook programs.

A real-world KnowledgePro application could be a simple expert-system-cum-online-reference-manual for a loan official or technician.

BUT HYPERTEXT?

Neither are suitable for real hypertext applications, however. Writing a hypertext document in KnowledgePro entails writing a program - although TextPro, which is supplied free with the package, does simplify this a lot.

Somehow, I never felt the interactive creativity that Guide seems to foster. And reading a Guide document is also much more intuitive, the user almost being invited to click on different words and buttons to find out what's behind them.

To conclude, KnowledgePro is a solid program, but it is not the right program for everyone. If you have an application that needs to give answers to the user about specific problems or questions, KnowledgePro is just the ticket. If you're looking for a hypertext program, you might do better elsewhere.

Price: US$495. Various add-ons and toolkits available range from $49 to $249. KnowledgePro applications can be distributed free of charge with a run-time version supplied. **- Charles Hugo**

Knowledge Garden Inc., 473A Malden Bridge Road, Nassau, NY 12123, USA. Tel: +1 (518) 766 3000

EXTENDAN.AME?

Well, Extend-a-Name is the kind of DOS utility that Macintosh users love to scorn. It offers DOSsers the opportunity to use filenames longer than the eight-character-plus-extension-of-three limitation of DOS. Of course, it's ridiculous to have to depend on a third party product for a feature like this - but beggars can't be choosers.

Loaded in memory, Extend-a-Name pops up whenever your text-based programs prompt you for a filename. You can enter a filename of up to 64 characters. Extend-a-Name maintains a directory of these names while supplying DOS with corresponding shorter ones.

While it's difficult to find fault with either the intentions or the fruits of the developer's labors, it's hard to recommend it. Extend-a-Name is one of an increasing number of programs coming on the market which try to circumvent the many limitations of DOS - a sure indication of an inadequate and obsolete operating system.

This package could soon be a software museum curiosity, anyway, if ever OS/2 inherits the DOS throne. One of the future enhancements Microsoft plans for OS/2 is longer filenames. Price: US$79.95.

— Colin Brace

World Software Corp., 124 Prospect Street, Ridgewood, NJ 07450, USA. Tel: +1 (201)444 3228

HARDDISK TUNE-UP

ILLUSTRATION BY MAX KISMAN

If "disk interleave" and "data throughput" are part of your daily vocabulary, you might be interested to know that SpinRite analyzes your harddisk's performance to see whether these factors can be improved.

Having analyzed a harddisk, it reads and rewrites every bit of data on it, accurately aligning the data with the heads of the harddisk and performing various other checks.

Through this realignment, it was actually able to regain about 25 Kb of sectors marked bad by DOS on my 40 Mb harddisk, and increase the data transfer rate about 30%. The accompanying 40-page manual makes some fairly technical matters reasonably comprehensible and the program is a breeze to use. (Set a few hours aside for it to do its work though.)

SpinRite is an inexpensive way for any technically inclined harddisk owner to pep up the performance of their harddisk. Price: US$59, plus $2 s+h. — Colin Brace

Gibson Research Corp., 22991 La Cadena, Laguna Hills, CA 92653, USA. Tel: +1 (714) 830 2200

at it from the opposite point of view —what'd be a regular structure that a computer could interpret. We tried to find an intersection of those two."

LOOKS LIKE ENGLISH

Winkler and his co-workers settled on an English-like syntax, an office-oriented vocabulary, and a language definition that allowed for synonyms, extra natural language-like connectors, and modifier terms for clarity.

Scripts are interpreted (translated line by line each time they are executed), and an integrated editor automatically indicates the location of most script errors. As a result, scripts are more understandable than the same operations in a language like C or Pascal.

Furthermore, the group decided to avoid, wherever possible, formulations that are counterintuitive to what people know from everyday experience. Winkler said that Atkinson was particularly insistent that they leave out the Pascal form of the assignment statement.

PHOTO BY STEVE ROSENTHAL

Winkler: "Bill was adamant that to a beginner, 'X = X+1' was not an assignment statement, it was a lie!" Sometimes, Winkler admitted, these decisions made scripts longer to type. But that was a cost the design team was willing to pay.

Winkler said they also realized that people don't learn a new language all at once. "One of the things we set up is that you can gradually unfold more power, though each step costs you more complexity. We tried to set it up so each step was bite-sized, and so you got a significant amount of power as a reward."

A key element in that strategy, Winkler maintained, was his early decision that there would be no reserved words in the language.

"It's assumed," he explained, "that people writing scripts will not know all the parts of the language. They'll just know a little bit of it to start. It shouldn't complain if they pick as a variable name some property they haven't heard of."

That same protection, he pointed out, also benefits professionals because the HyperTalk language itself may expand and change. "I would like in the future to add new properties and functions, and I don't want to jeopardize (existing) scripts," Winkler added.

STACKS AROUND THE WORLD

The international nature of HyperCard has also proven to be a challenge. As with all Apple products, company policy dictated it should be adaptable to the different language markets where Apple sells computers.

For HyperCard, that meant not only menus and manuals in the local language, but also HyperTalk scripting.

"That was always in the back of our minds," Winkler said. "But our take on that was that we weren't fluent in other languages." Consequently, they settled on a structure modeled on English but a provision in the architecture that would smoothly integrate translation modules.

"You can actually say in HyperTalk, 'set language to French,'" Winkler explained. "If you do that, it will go look in its resource fork (a portion of the computer code) for a 'WTRN' resource and load it."

Surprisingly enough, the translation module doesn't make a one-time translation to or from the required language, Winkler said. "Scripts are always stored on the disk in English, so a stack written anywhere will run anywhere."

That also allows the main HyperTalk program and its parsing routines to stay constant all over the world.

Instead, said Winkler, "the translator sits between the disk drive and the script editor." As scripts are brought in from disk to the editor, they are translated into the target language. When the editing is finished, a script is translated back into English as it is stored on the disk. Consequently, the translator module must be bidirectional.

Winkler said he had done a simple word-for-word substitution translator, but the best efforts take into account more contextual information.

For example, he said, a Swedish translator by Martin Gannholm of Apple Sweden looks at the scripts in strings of up to three-word groups, using extracted meanings to differentiate among Swedish homonyms for different English terms.

Furthermore, because natural languages are not symmetrical, the strategies for translating from Swedish into English are not identical to the strategies for going from English to Swedish.

While he couldn't talk about unreleased products, Winkler admitted that many of the same problems come up in the design of a compiler – which is, after all, a translator from HyperTalk to machine code.

Winkler pointed out that the deliberate attempt to stay close to natural language means that a HyperTalk compiler program cannot know unambiguously at translation time the precise meaning of each line of source code.

AMBIGUITY

Other than in more machine-like computer languages such as C or Pascal, variables can hold different types of values (there is no "typing" of variables), and the syntax doesn't automatically determine whether a word is an operator, a variable or an unquoted literal value.

A HyperTalk compiler would have to take that ambiguity into account by providing the code needed for each possibility, Winkler explained. That's still a lot faster than interpreting each line of the script every time.

Compiling a script would greatly reduce the burden that this more userfriendly approach to computer languages imposes, but there is still an execution-speed and program size penalty.

Even with all of its accessibility, popularity and international adaptability, Winkler admitted that HyperTalk is still very much a specialized means of communication: "You might say that it's still only used by a small fraction of the planet."

But, he added with a touch of pride, "the fact is there's a lot of people right now creating software using HyperTalk who couldn't do it in any other language. It's definitely touched people's lives. It's given them power they just didn't have before. To me, that makes it worth the effort."

Steve Rosenthal is a freelance computer journalist based in Berkeley, California, and a columnist for MacWeek magazine.

Since Amstrad first started selling PC's nearly five years ago, skeptical industrialists, journalists and market analysts have frequently maintained that the company is little more than a flash in the pan, and that Amstrad would never find a niche in the international marketplace.

But, in defiance of its critics, Amstrad has prospered. The company today builds PC clones more cheaply than anyone else in the world and has become a household name throughout Europe.

Last summer Amstrad overtook IBM to become the biggest seller of PC's in Britain (by volume, not value) and is rapidly closing in on IBM in France, Spain and Italy.

Along the way, pre-tax profits have leapt by an average of 100%, generating the kind of margins which, in the words of one industry analyst, "frighten the life out of the competition."

LORD OF THE MANOR

Much of this success is due to Sugar himself, who manages Amstrad like a medieval lord overseeing his fiefdom.

Sugar holds 46% of Amstrad's $1 billion worth of stock. This makes the company virtually impervious to both outside takeover and any internal management rebellion. Even the company's name is taken from his initials: *A*-lan *M*-icheal *S*-ugar *TRAD*-ing.

Sugar generously rewards success at his company, and he mercilessly punishes laxness and failure. One of his preferred targets is the mass of "corporate wimps" who are afraid to speak out or fight for what they believe in.

But his favorite target is always the competition – and now Amstrad is after them again. The company is cur-

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THE CAT IS DEAD, LONG LIVE THE INTERFACE

by Ezra Shapiro

After a brief and checkered existence, the Canon Cat is dead, killed by a manufacturer that never quite knew what to make of it nor how to market it to its intended American audience.

This spiffy-looking little machine, with an unusual and provocative text-oriented interface, was built around technology licensed from Information Appliance, the company founded by computer scientist Jef Raskin, original leader of the team that created the Macintosh for Apple.

But although the departed Cat will be mourned by lovers of innovative computer design, its interface seems destined to survive, exhibiting the same potential for longevity as its proverbial nine-lived namesake.

LEAPING

The central concept of Raskin's work is that searching for strings of characters is a faster way to move around in text than using cursor keys or mice. Information Appliance has patented an algorithm for search-based positioning that they call "leaping."

Every one of the firm's computer designs, starting with prototypes shown to friends and investors in 1984, features two special keys below, or on either side of, the spacebar of a standard keyboard. Pressing and holding one of these keys initiates a search; the right key moves forward and the left moves backward.

As long as a leap key remains depressed, typed letters are added to the search string. The process is both immediate and cumulative; the cursor jumps to the next occurrence of the total string as each letter is entered.

Typing a "t" moves to the next "t," adding an "h" moves to the next "th" combination, and so on. Should the string not be found, the cursor returns to its original position. Aborting a search is as easy as adding nonsense characters to the target string by slapping a hand onto the center of the keyboard.

Raskin notes that though the leap key mechanism defines a search mode separate from normal text entry, the user perceives leaping as easy and modeless; there are none of the dialogues that characterize searching in other computer interfaces.

Text can be highlighted by leaping from one end of a region to the other and pressing both leap keys simultaneously; the block can then be moved, copied, deleted, printed, underlined, justified, and so on.

If the highlighted block is an arithmetical formula, a result can be calculated; if it's a program coded in either Forth (the language in which the system was developed) or Assembler, the program can be executed.

The Information Appliance scheme is ideal for retrieving random bits of data as well as performing routine editing tasks.

The ROM-based software treats all input as an endless stream of characters, divided at the user's discretion into pages and/or documents; the environment is a comfortable blend of wordprocessor and freeform database.

The novice is not troubled with the additional layer of an operating system with discrete files and directories, while the expert has no need of cumbersome utilities with which to locate data across the boundaries of such a structure.

The Canon Cat boasted not only the latest incarnation of this software, but a crisp, black-on-white bitmapped display, a 90,000-word spelling dictionary, a built-in 1200 baud modem, 48 screens of online help material, and a keyboard closely equivalent to that of the ubiquitous Selectric typewriter.

EIGHT LIVES TO GO

Why did this novel experiment fail to attract loyal customers? The answer lies more in how the machine was sold than in what it could do.

Canon deliberately avoided the word "computer," and rarely mentioned the Cat's unique heritage. And at its introduction in 1987, the Cat was priced at $1595 – more than the cost of a full IBM PC/compatible computer system with software.

The press yawned at a machine that at first glance didn't appear to be much more than an oddball wordprocessor, and an expensive one at that. There was scant editorial coverage, and Canon failed to back the Cat with anything more than minimal advertising. Even a 50% price cut in mid-1988, to $795, stirred little interest.

Late in March 1989, Canon halted production and shipped its remaining inventory – some 4000 units – to a chain of catalog stores to be sold at the bargain price of $399, which included both the computer and a companion daisywheel printer.

However, the Cat lives on in spirit. At present, Raskin and his co-workers at Information Appliance continue to advance the ideas embodied in the Cat, funded largely by the licensing fees paid them by Canon.

Their current design is a Cat-like laptop computer, roughly competitive with the Cambridge Z88. The company is building prototypes, negotiating with possible manufacturers, and hoping to unveil the next generation sometime later in 1989.

For more info: Information Appliance Inc., 3530 West Bayshore Road, Palo Alto, CA 94303, USA. Tel: +1 (415) 493 2400.

Ezra Shapiro is a Los Angeles-based freelance computer journalist

LANGUAGE INDUSTRIES SURVEY

Language industries survey

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Inquérito sobre as indústrias da língua

Έρευνα σχετικά με τις βιομηχανίες της γλώσσας

DOCUMENT IMAGE PROCESSING AT NEWSPAPERS

Introduction

This is the first in what will be a continuing series of Language Industries Survey (LIS) Bulletins, which will appear regularly in LT/Electric Word magazine. LIS Bulletins will focus on the demand side of language technology – how corporate users have implemented new technologies to solve various critical problems in dealing with language and paperwork burdens. Specifically, we will be examining the nature of their problems, the range of technologies currently available, and how these companies have implemented these solutions in their own organizations.

The technologies we will be covering are some of the newest and most exciting in computing. They have been developed by the emerging language industries, and include:

- products which facilitate the manipulation of word-based information, like wordprocessing and desktop publishing;
- new methods of inputting text (optical character recognition)
- and new technologies which apply linguistic intelligence to processing natural language – like advanced inputting devices (intelligent character recognition), grammar checkers, and ultimately natural language understanding and machine translation.

Since recent estimates indicate that almost half the labor force of advanced industrial countries is already involved in information activities, it's clear that these technologies are not only exciting but crucial. Crucial to the individuals and corporations that need them. And crucial to the competitive wellbeing of the societies that develop them and foster their use.

This month we're taking a look at handling large document storage requirements through Document Image Processing.

A LITTLE BACKGROUND ON DIP

In the same way that word processors and PC's revolutionized documentation creation during the 70's and 80's, DIP is poised to revolutionize document *storage* in the coming decade. Revolutionizing the storage of documents has important implications for companies operating in the unified European market coming in 1992, since document storage needs are likely to be compounded by the fact that many documents will have to be written and stored in more than one language. Advances in scanning, image processing, storage and retrieval, combined with cheaper processing power and mass storage, are resulting in products which are attracting interest from companies which are traditionally big movers of paper.

Case in point: newspaper publishers. Newspaper publishers have, since time immemorial, kept extensive archives of clippings and other reference materials for ongoing journalistic purposes. These materials are usually stored by date in traditional filing cabinets under the supervision of an inhouse archivist.

The decision to implement a DIP system requires careful assessment by the end user of its needs. In the case of a number of newspapers in the UK, the issue is often one of large scale logistics—sheer tonnage of paper, in other words.

As newspapers move to modernized plants – like the Daily Mirror and The Express leaving Fleet Street for modernized plants in the redeveloped innersuburbs – they are faced with the prospect of moving tons and tons of paper clippings and photographs to the new premises.

A CASE STUDY

problem: a newspaper with 10 million clippings. When the *Daily Express* recently moved to new quarters in London, it only had space for half of those clippings.

solution: Rather than move all 10 million clippings, they are storing archive material in a Harlon and Simons OPAL system. OPAL is a DIP system designed specifically for storing and retrieving newspaper clippings. The newspapers archivists are currently scanning in clippings in "indexing workstations," where they can view the scanned clipping and index it as needed.

why: In addition to the purely physical problem of moving this mountain of paper, the newspaper decided to take advantage of the opportunity, and implement this new technology. Wordprocessers had become an indispensable part of the editorial department, and it seemed a good moment to modernize the archive department as well.

how: The clippings are stored as images. The benefits of doing it this way are the preservation of the original layout and any accompanying illustrations, a treatment which the journalists prefer. On a technical level, the indexing overhead is lower with images than with pure text – it's cheaper to input images (a simple scan) than text (at best OCR with postediting, or at worst rekeying) meaning more modest hardware requirements.

Clippings are first indexed by date, then cross-indexed by the archivists. The number of indexing entries for one clipping might be one or two, or as many as thirty for a longer piece. The Daily Express estimated 40 person-years would be required to process all 10 million clippings, so a decision was made to process just five million, and store the remainder in conventional form. Seven archivists are working fulltime scanning and indexing clippings. The Chief Librarian Keith Beard says they process an average of about 80 clippings a day.

Journalists are now being trained to use the system. They can search for clippings on the basis of one or more index entries, and view up to four clippings simultaneously on the retrieval workstations. Printers have been stationed on each floor of the building to output desired clippings.

At the moment, photos and other illustrations which are a part of the clipping can be viewed onscreen and printed, but the quality is not high enough for further publication or reproduction. Likewise, the newspaper's photo archives are still on paper, since high resolution electronic storage is still not economic. While the current system is still in the process of implementation, future enhancements might be direct input from remote offices, via high quality fax machines, or, far superior, ISDN lines sometime in the future.

Also under consideration would be a related text-based storage system, using optical character recognition software to convert the previously scanned documents to text format. Clippings would be scanned and stored as images to preserve layout and illustrations, and linked to the texts in the text-based system. A text-based system would simplify publishing CD-ROM archives, as, for example, a number of American newspapers are beginning to do.

CONCLUSIONS

DIP offers a solution to many companies confronting the problems of storing material — like newspapers, insurance companies, patent offices, large corporations etc. Even more valuable, considering that the volume of stored material should grow faster than normal due to multilingual documents.

The LIS Bulletin is a publication of the Language Industry Survey, an officially funded project of DG XIII of the Commission of the European Communities. The Language Industries Survey is a research and evangelical project intended to inventory and foster awareness of the language industries in Europe and around the world. If you are a researcher, developer or producer of hardware or software for the language industries, please write to us for a questionnaire. If you are a qualified respondent, you will receive a database of public information on a floppy disk about all the respondents (expected to number over a thousand), in addition to a free, one-year subscription to LT/Electric Word. Send your request to:

LIS Questionnaire – LT 13
P.O. Box 5477
1007 AL Amsterdam
The Netherlands

WANT TO GET SOMETHING OFF YOUR CHEST? WRITE TO THE EDITOR LT BOX 70486, 1007 KL AMSTERDAM, THE NETHERLANDS

RASKIN ON HYPERCRUD, PART 2

A FRUSTRATED USER FINDS HYPERCARD JUST DOESN'T STACK UP

by Jef Raskin

Last issue, Jef Raskin lashed into HyperCard, Apple's programming tool, and a key part of its multimedia strategy. Here is Part Two of his assault.

It is true that hardware performance will continually increase, and memory will once again become less expensive. So, one might argue, if HyperCard is not really viable on today's machines, perhaps it is the wave of the future. To be sure, there *are* good ideas in HyperCard that will be picked up by future designers. But it will continue to be misused, since Apple includes it with every Mac,and companies are seldom good at explaining the limitations of a product. To hear them tell it, HyperCard does everything but cure cancer. The best we can say for HyperCard is that it is superb as a demonstrator of a concept that is yet to become cost-effective and practical. Supporters point out that kids happily use it and can do things with it. Children are not critical observers and are especially insensitive to cost issues. They will play happily for hours with the most abstruse and difficult systems; indeed HyperCard is a *fine* toy, just a lousy *tool*.

But, it might be objected, wasn't it much easier to program the application you bought in HyperCard than it would otherwise have been? And isn't the result much easier to use? I discussed this with the developers of the application I bought. At first they thought they would save a lot of time by using HyperCard, but in the end, a year later, they found that they could have done a faster, more efficient implementation in about the same time if they had used Pascal. So it didn't save programming time. In fact, they felt somewhat cheated. According to them, when you try to do something well with HyperCard, it becomes just like any other programming environment: nasty, quirky, complex. Expertise is still indispensable.

Was the application easier to use for having been implemented in HyperCard? The designers did a good job of matching the stack to the needs of the user. I would guess that they would have done the same in a conventional language, so that's a wash. Where the user loses is in having to learn HyperCard *and* the application, whereas if it had been done in a programming language, the user would have just booted the program and used it. For trivial tasks HyperCard is easier to set up, but trivial tasks are just that.

ILLUSTRATION BY MAX KISMAN

I have since looked at a number of other stacks. There is a family resemblance in their failings, some of which are caused by some flaws in the underlying concept of Hypertext (see my article "The Hype in Hypertext" in the *Proceedings of the First Hypertext Conference)*, some by the design of HyperCard, and some by the unfortunate habits of most stack designers. There may be some good stacks, since anything is possible, but I can only report on those I've seen. Then there are all the hidden commands you must memorize. For example, I was in the middle of a stack (made for kids) and there was no way to get out. A friend – a real pro at using Macs – was standing there and said "Use Command Q," which got me out. A few minutes later, as I was writing this paragraph in fact, I had to ask: "Was that control Q, option Q, or Command Q?" Remember, by the way, that the key with the Apple and the Pretzel on it is called "Command" for some reason.

The problem with creating HyperCard stacks is really something like the problem of learning to play the recorder. The recorder is a simple instrument on which anyone can play a tune in minutes. It takes years of intensive effort and study to master it. But the ease of the first few steps is seductive, and this is probably the reason why so many people play the recorder so badly. HyperCard is like the recorder. As Sculley says (in the introduction to Goodman's book), "With HyperCard, virtually anyone can become a software author, producing an information-based application that looks like a professionally designed Macintosh application."

And Sculley is exactly right. Read his words very carefully. He is not saying HyperCard is a panacea. He is saying that any duffer can make a stack that *looks like* a heavy duty professional, graphic Mac application. What he doesn't say is that it still takes much time and effort, along with skill and experience, to make one that *performs* like a professional application. And even then, it will be slow and use disk space as if it were free.

While many people find certain stacks useful, they might give a moment's thought to the thousands of dollars of computer equipment they are mobilizing to accomplish the task, and should be horrified by the poor cost/benefit ratio. A little program on a handheld calculator or address machine might do the same job with the same effort for $69.95 total cost.

If you're rich, then the cost of a Mac is a bagatelle, and my objections are of no account. Also, if you choose a cost-effective path to a simple problem, you don't have the cachet of a Mac on your desk. But then, some people buy furs, expensive cars, and a house with the right address because they hope it will make them feel good. At a recent conference someone stated that it was wonderful that HyperCard sold for so little, a mere $49.95, and thus could bring the wonders of hypertext and its promise of access to information to the masses. I responded that the price of HyperCard was fine, but you still needed a multi-thousand-dollar computer to run it, and I mused that given the circumstances, perhaps hypertext should really be called yuppietext.

I have complained elsewhere of the overblown systems that we have to pay for, suffer with, and yet don't need (i.e. in *Programmers at Work*, Microsoft Press) as have others (for one, see Ezra Shapiro's article in *Byte*, January 1989, page 127 on "The Blight of Bloated Software"). Is the personal computing industry trying to emulate its mainframe ancestors and create a new age of dinosaurs? HyperCard is just one more blunt object with which the industry bludgeons us into buying stuff we don't need – stuff that encourages sloppy applications, stuff that is overly complex, and stuff that wastes our time and money.

While at Apple, Jef Raskin was head of the crew that created the Macintosh (he's got the 1,000,000th sitting behind his desk in recognition of the fact.) He's currently CEO of Information Appliance Inc.

RESEARCHWARE FOR LINGUISTS

Computational linguists and language engineers of all persuasions often need to make matrices to show the properties of the words they are studying - especially if they want to build automatic parsers to capture the dependencies between those words in sentences.

Patrick Legrand, a natlang hacker at a university computer center in Nantes, France, has riveted together a useful software tool to help them do so more quickly.

Dubbed Moly, Legrand's menu-driven package enables words to be entered in lists and their formal contextual properties to be aligned horizontally. Grammatical word class membership is entered as "-" or "+," and the resulting matrices are shown either onscreen or printed out.

A search facility then allows you to select any formal string – for instance, all those verbs in your list that can appear in a N-V-to-V-N^{hum} template – thereby giving you rapid access to any interesting grammatical sub-classes.

The system was inspired by the "lexi-grammar" approach to natural language research developed by French "lingformatique" guru Maurice Gross, one of whose findings, rapidly demonstrated by Moly, is that most words in any language are in a grammatical class of their own.

Moly can be used for any West European language, even though the interface is at present in French. It runs under MS DOS on a PC, but is not yet commercialized. Contact the author for details.

Patrick Legrand, Liana-Nantes, 3 rue du Maréchal Joffre, 44080 Nantes, France. Tel: + 33 40 30 60 90

RISING SUN WRITING FUN

Don't let the Macintosh's lack of support for Japanese hamper your style, not when your daddy's rich and there's Sweet JAM and EGWord burning up good shelf space.

Sweet JAM – short for Japanese Attachment to Macintosh – supports two basic modes for inputting Japanese text into Macintosh programs. Roman-alphabet phonemic values can be entered for conversion to both kanji (Chinese pictograms) and kana (syllabic script). Or kana can be entered direct.

A 35,000-word kanji dictionary is supplied, and the program allows many kanji character types to be resized and styled, using standard Mac menu functions. Sweet JAM takes just 14 Kb of memory and runs on any 1 Mb Mac.

EGWord is another Japanese wp program, also supporting both phonemic and kana input. In addition to having a 49,000-word dictionary, EGWord supports a user dictionary that can hold up to 24 Kb of entries – approx. 6,000 kanji characters.

Ergosoft, the program's developer, has designed it to work seamlessly with its page layout program EGBook, which will support both horizontally and vertically aligned text.

PostScript Japanese fonts are expected to be available later in 1989 and will support all the standard Mac text attributes.

EGWord 3.0 is based on and includes Apple's KanjiTalk system software and requires 2 Mb of RAM.

Prices: Sweet JAM, US$249; EGWord 3.0, US$499; EGBook 1.2, US$599.

US distributor for both products: Qualitas Trading Company, 6907 Norfolk Road, Berkeley, CA 94705, USA. Tel: +1 (415) 848 8009

CALL FOR NEW GERMANS

ILLUSTRATION BY MAX KISMAN

With increasing numbers of East European *Volksdeutsche* finding their way to West Germany, the problem of teaching them their forebears' tongue is an acute one. The younger generation often has no German at all.

A young people's computer club in Celle (Lower Saxony) has come up with an ingenious solution. The club has developed a hard/software language-training package for these immigrants – or at least for those whose native language is Polish.

The PC-based package consists of a synthetic speech card and computer-aided language-learning (CALL) software.

The PC's monitor first displays a sentence in Polish, which the voice card "speaks" in that language. Then, the learner is asked to translate the sentence into German. Once this has been done, the correct parts of the answer appear on the monitor, mistakes being shown as blanks.

Next, the learner gets one chance to correct mistakes. Once s/he's done, the correct German sentence is displayed on the monitor and "spoken" by the speech card. Finally, this sentence can be repeated indefinitely to allow the learner to imitate it to perfection.

For additional help, the package includes a memory-resident bilingual dictionary for vocabulary-learning exercises. The software will also work without the speech card, but of course, also without the ability to let the learner practice pronunciation.

Pretty good for any software developer – let alone a youth club.

F. Metzeler, Jugenddorf Celle, Amelungstr. 50, 3100 Celle, FRG

CHINESE MT (CONT.)

plements morphological, syntactic, and "semantic meaning" rules.

According to the Chinese Trade Council, 500 copies of Transtar have already been sold in China, mainly to universities and the People's Army.

Now the China Software Technique Corp. is furiously looking for distributors outside China.

Blue Star Co., 38 San Li He Road, West District, Beijing, China. Tel: + 86 831 55 49

LEXPERTISE (CONT.)

ther. Lexpertise plans soon to release a French version of MacProof for English speakers struggling to write (even not so) *belles lettres*. A German counterpart is still under wraps, and other European-language versions are planned for the not-too-distant future.

Lexpertise Linguistic Software SA, Château de Vaumarcus, 2028 Vaumarcus, Switzerland. Tel: +41 (38) 553 131

N E W S N O T E S

MOUSE AROUND XYWRITE
For new and occasional users of XyWrite, Galactic Software (Huntington Valley, PA) is now offering XyMouse, a menu system supporting the mouse to provide "point and shoot" operation of XyQuest's popular wordprocessing package. It requires 40 Kb of RAM and costs US$149.

MORE FONTS FOR LASERJET
TypeDirector is a font generation program for LaserJet printers co-developed by Hewlett-Packard and Agfa Gevaert's Compugraphic Division. It enables LaserJet owners to generate fonts from four to 200 points in size, and be able to view them onscreen before printing. The package includes a range of serif, sans serif and decorative fonts. It's priced at US$680 and is compatible with Windows 2.0 and Ventura Publisher 2.0, among others.

FAX ME!
A market survey by Communications Daily reports fax sales up a whopping 194% in the US last year, totalling more than 1,133,000 units. It goes on to predict that they could increase another 50% by the end of the year. Sharp is leading the pack with an 18% share of the market.

RELIEF
Still more relief from the constraints of DOS's 640 Kb memory ceiling is offered by Headroom (US$99), from Helix Software (Briarwood, NY). Headroom allows users to perform daring feats of memory management, swapping TSR's in and out of memory, as well as shifting between graphic and text modes. Headroom requires just 52 Kb of RAM to do its magic.

ASKSAM IN MORE FLAVORS
Two additional versions of text retrieval/hypertext product AskSam are now available. AskSam 4N is a network version, supporting up to ten terminals from a server and compatible with most leading networks. It costs US$895. HyperSift, a runtime version of AskSam is also available, offering the same retrieval and reporting features as the full version, without the ability to modify textbases. Prices: US$75; or US$15 apiece for 100 or more. From AskSam Systems (Perry, FL).

FIND THAT CURSOR
Cursors lost on the screen of your DOS laptop can now be relocated with the help of the NoSquint LapTop Cursor from SkiSoft Inc. (Lexington, MA). This memory software slows the blinking rate of the cursor, making it more visible. US$39.95.

FILL FEDEX FORMS
A Federal Express form filler is being offered for US$5 by BLOC Publishing (Coral Gables, FL) as a sampler for the company's Formfiller for PC/compatibles. The fully-fledged program (US$149) allows users to design templates for filling in any form on their PC.

FONTS FOR EVERYONE
Bitstream (Cambridge, MA) is introducing a large library of PostScript fonts for the Mac. While the fonts are aimed at high-end printers like the Linotype Linotronic, they can also be used with 300-dpi printers like the LaserWriter. 300 fonts are already shipping, and a total of 1,000 should be available by summer. US$45 per font.

On the DOS side, Bitstream is now selling its Fontware Installation Kit 3.0 for WordPerfect 5.0. Fontware scales fonts to specified sizes, adapts them to user hardware, and installs them automatically in supported software. It is device (printer) independent. Free to registered users of WordPerfect 5.0.

(See also "Postscript Cracked", page 7.)

FUN FOR SUNS
Sun Microsystems has announced three software programs for its workstations based on Open Look specifications. The three – SunWrite (US$65), SunPaint (US$ 495), and SunDraw (US$495) – were designed to satisfy the need for easy-to-use applications like those available on the Mac and the PC. Purchased together, they cost US$995.

CHEAP FAXES
Xpedite Systems (Eatontown, NJ) is offering fax services to anyone with a PC and a modem. All that's required is its software, PC-Xpedite (US$49; includes US$10 worth of faxes) and a printer to get your faxes onto paper.

FAST BACK(UPS)
Version 2.01 of FastBack Plus (US$189) adds a couple more tricks to the already popular backup program, enabling users to easily make the fastest harddisk backups known to humankind. If your PC has two floppy drives of the same format, it can use both simultaneously. Fifth Generation Systems (Baton Rouge LA).

WORD 5.0 ON HORIZON
With version 5.0 of Word, Microsoft (Redmond, WA) is clearly hoping to gain terrain from its archrival WordPerfect by offering a host of sophisticated formatting and DTP features in its top-of-the-line wordprocessor while remaining within the confines of character-based display. And no surprise, a PS/2 version is in the cards.

COLOR POSTSCRIPT
QMS has signed an agreement with Pantone, allowing it to incorporate Pantone colors in its Colorscript 100, thus offering the possibility of color to applications that generate PostScript print commands.

Pantone proprietary color technology offers the very highest precision in color separation and accuracy of video display. And software developers who license it will receive a QMS ColorScript look-up table for generating colors within applications.

QMS EXTRA
A QMS subsidiary, Laser Connection, has three new printer enhancements: MacJet, a LaserJet printer driver for the Mac (US$ 249); SX Envelope Tray, an automatic envelope feeder for all Canon SX-based laserprinters; and Big-Bin, a motorized paper feeder holding up to 1,000 sheets, for Apple LaserWriter II series laserprinters (US$795).

MULTIMATE EXTRAS
MultiMate Advantage II users are now being offered an enhancement package by Ashton Tate (Torrance, CA). The bells and whistles include a page preview option, menu-driven font and printer selection, and a pull-down menu system. Also included is a Bitstream Fontware Starter Kit.

INTERLEAF (JR.)
An entry-level version of Interleaf Publisher for Sun workstations has been introduced by Interleaf (Cambridge MA). It is targeted at users who need to assemble and manage very large documents, allowing for multiple chapters and the coordination of page numbering, multi-author editing, indexing, and cross-referencing. Documents can be automatically updated around a network. Price: US$2125.

JUST TESTING
Question Mark, from London's Question Mark Computing, is a DOS-based CAL authoring system for creating tests and quizzes. It consists of two companion programs: one for teachers to design tests; the other for students allowing them to take the test but not modify it or view the answers. The computer tracks the answers and calculates a score at the end. Eight different kinds of questions are possible, from multiple choice to free format, of which the latter depend on simple BASIC-like programming formulas to evaluate answers.

WP UNDER OS/2
An OS/2 version of WordPerfect is planned for the second quarter of 1989. The price has not yet been announced. WordPerfect Corp. (Orem, UT).

CLARIS BUSY ON ALL FRONTS
Scarcely more than a year old and already a major supplier of Mac software, Claris Corp. of Mountain View, CA is ambitiously firming up its entire line.

MacWrite II (US$249), a long-awaited refurbishment of the classic Mac wp, features a style function, a user menu (à la Word), as well as – sez Claris – much more speed.

MacDraw II 1.1 (US$399) now offers multiple layers within a file and a slide manager for all you presentation-obsessed MacOlytes.

The SmartForm Series consists of SmartForm Designer (US$399), for creating forms, and SmartFormAssistant (US$49), for filling those forms out.

STRAIGHT ONTO TAPE
Kroy (Scottsdale, AZ) has introduced a software/printer combination which allows PC users to print high-quality characters and symbols directly onto adhesive-backed tape. Menu-driven software called LetterCrafter controls a KROY 360 PC thermal transfer printer, producing a wide variety of typefaces and sizes. Bar codes can also be generated. The printer operates at 26 characters per second, at a resolution of 300 dots per inch. Different colors can be produced by changing the printer ribbon. The adhesive tape itself is also available in various colors.

SLICK PUBLISHER
Clearly aware of the repetitive nature of much document production – the recurring need for updated versions, varying contents, etc. – London-based Migent (UK) has introduced dbPublisher for PC/compatibles. Calling it a slick report generator might not quite do it justice, but in essence, that's what it is. It resembles Ventura in that multiple *external* documents can be linked in one publication and – more importantly – those documents remain active. Update the documents and your publication is updated. dbPublisher offers compatibility with a wide range of database, spreadsheet, wp, and graphics software. It has advanced typographical control – almost a given these days – and supports SGML markup tags. Price: US$672.

MINITEL GROWS "VOCALE" CORDS

French telematics company Videatek has developed a speech synthesis application for Minitel called Vocale.

Originally pitched as a subscription text-to-speech service to help the French hard-of-hearing send phone messages, it has been open to the general public on the professional (36 17) access service since December 1988. Vocale will accept messages entered from the keyboard and deliver them in synthesized speech over the telephone to another party.

The synthesis rig operates in real time, analyzing phonemes – no dictionary backup – making processing time shorter. The output prosody is pleasantly enough modulated to make you think of Space Odyssey's HAL rather than a Dalek.

According to Videatek director Jean-Paul Guérault: "French Minitel communication has hardly changed in the ten years of its existence. Vocale is the first revolution in the technology."

Indeed, the gizmo freaks who first plugged into the service have already been superseded by a 36 17 record of over 400 hours of connection per day for serious users.

Videatek plans to introduce voice synthesis technology in other electronic mail applications - the obvious area being the sending of telephone messages at fixed times.

Other projects include the development of US and Italian speech boards. Videatek is currently discussing a videotex application with Bell Canada.

CAW

Intrepid LT staffers have identified the next boom in the software industry: computer-aided weddings, already familiar to some under the title "desktop marriage." At the cutting edge is a new software package from TLC Software, Sherman Oaks, California: the Computerized Bride Guide. The program offers the nervously betrothed assistance in planning all aspects of the wedding, from placing deposits and budgeting the band to managing the guest list and planning seating arrangements. It even provides a gift and thank-you note database. Rumor has it that TLC Software will shortly be releasing other trendsetting companion products. Among them: CAD – Computer-Aided-Divorce. The Computerized Bride Guide costs US$89.

LOWCOST OCR

Szki of Budapest, Hungary, has released a new version of its Recognita OCR software. The package is available in two forms: one for the English character set only, and an international version that recognizes all major European character sets. Recognita is mouse-driven, and includes drivers for a wide range of scanners. Various exporting options are also available. It has an image capturing option and test scan facilities for scanner contrast settings. According to Recognita's UK distributor, Intac Data Systems, users need no training to use the software.

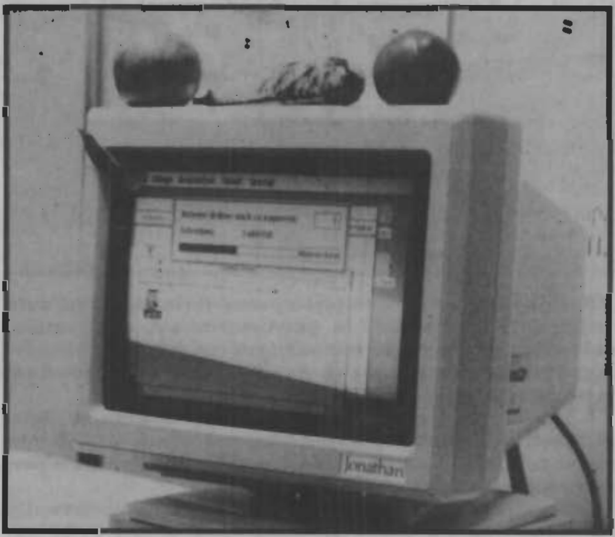
Intac Data Systems, 9 Trees Trading Estate, Thurcroft, Rotherham, South Yorks. S66 9JG, UK Tel: +44 (709) 547 177

LANGWARE FOR LORDS

Westminster's Other Place, the venerable House of Lords, now has its own ermine-lined software to assist in the preparation of legislation. The software was not originally developed for their lawdships. What they use is a tailored version of a commercially available UNIX-based text comparison program called VDIFF, developed at the University of Kent, Canterbury. Successive drafts of bills can be viewed on-screen, with amendments automatically highlighted. Up to now, clerks in the Public Bills Office have had to read versions of bills aloud to one another for comparison.

Kent Software, University of Kent, Canterbury, Kent CT2 7NZ, UK. Tel. +44 (227) 764000, X 7695

LID STILL ON APPLE CLONE



A small, obscure company called Akkord, from Taipei, Taiwan, finally demonstrated a Mac clone in public at this year's Cebit computer megashow. But the company was so coy that it refused to label it as such, preferring to call it "tomato-compatible," and festooned it with fruit and vegetables. And the threat of legal action against it by the litigious Apple hung so heavy in the air that any questions of when the Jonathan will hit market were politely declined.

Did it work? Legions of eager Cebit Mac hackers tried their damnedest to crash it, without notable success. Benjamin Heidersberger, editor of the German Mac-monthly MacUP spent three days testing Jonathan, and ended up announcing, "It works!" The only crash LT/Electric Word editors witnessed occurred when a copy protected program required the ejection of a key disk.

The obvious attraction of a Mac clone is price relief for the long suffering Mac lovers. As K. Fukunaga of Jonathan Computer Deutschland, and self-acclaimed personal friend of Akkord's president Marc Hara, put it: "Apples are great machines. I see young kids sitting behind them with shiny eyes. I want them to be able to get one. Apple does nothing for these people."

Just the facts, ma'am: Jonathan looks like a midget PC, has a 68000 processor, comes with one Mb of built-in RAM, features an 800 Kb internal floppy drive, has two serial RS-232/422 ports, two ports for connectivity, an internal and external SCSI interfaces, a four channel sound generator, an external floppy port, a keyboard and a mouse.

There's only one thing missing: Apple's ROM (Read Only Memory) chips – the most and best protected part of a Macintosh's memory. Jonathan will be shipped without the ROM chips to avoid violating patent laws. "You'll have to buy those yourself," says Fukunaga. "Just get original 128 Kb ROM's. They go for $90." Jonathan price: 1,000?

The company's "working on" all the legal issues in Germany, Taiwan, and the USA. When it has figured those out, Fukunaga assures us, it will "decide on the direction to go." It had better move fast, if rumors circulating at CeBIT are correct. As soon as it brings out its new operating system 7.0, which will run optimally only on its new 68030 chip machines, so go the rumors, Apple will license its older system 6.0 and *hardware* to third part vendors, thereby creating legal clones.

Jonathan Computer Deutschland, Gräffstr. 5, 5000 Köln 30, FRG. Tel: +49 (221) 579 9429.

DESKTOP DIP (CONT.)

The system includes interfaces and controllers for many popular scanners, viewing facilities (including magnification and scrolling), image manipulation and compression, encryption and file security, printer support, and various other utilities.

Xionics also offers complete systems with a 286/386 PC, XIP card, 4 or 8 Mb RAM memory, scanner, printer, and removable optical diskdrives. Systems can be supplied with an indexing database, or custom support for other database or DTP systems.

Xionics' bold plans for DIP-X include UNIX, OS/2 PM versions, MCA bus support, OCR/ICR, X400, SNA/SAA and ISDN compatibility, and then some.

Xionics Inc., 765 City Drive, Suite 340, Orange, CA 92668, USA. Tel: +1 (714) 971 4717

GRAMCHECK (CONT.)

ensures speed and accuracy. Houghton Mifflin says it takes an average of one second to check each sentence.

In WordPerfect, Alt-G activates Correct Grammar from within wordprocessing. It saves the active document to disk, loads Correct Grammar, and goes to work. Correct Grammar checks both spelling and grammar in one pass. It also recognizes words entered into WordPerfect's user modifiable dictionary.

Houghton Mifflin's CGS is also at the heart of a DEC gramchecker, offered as an option for version 3.0 of its WPS-PLUS wordprocessor running on VAX/VMS computers.

The Boston company claims that CGS has attracted huge interest among other potential OEM's – "including machine translation companies," says the company's Mary Ellen Hoke.

The company can, however, afford to be selective. It won't be doing deals with just any old software cowboy. Says Hoke: "We want to be associated with good products. And we haven't seen too many of them yet."

Correct Grammar for WordPerfect 4.2 and 5.0 sells for US$99.

Lifetree Software, 411 Pacific St., Monterey, CA 93940, USA. Tel: +1 (408) 373 4718

Microlytics Inc., One Tobey Village Office Park, Pittsford, NY 14534, USA. Tel. +1 (716) 248 9150

SPEECH REC FOR PROS

Radiologists can now do it while perusing their notes.

Legal secretaries will be able to do it quickly without spending hours wearing out their fingertips. Maybe tax return officers will eventually be able to do it without making mistakes.

Using the new single-speaker speech recognition system developed and marketed by French software developer Provisuel, experts who need to record and print out precise data in a pre-structured format can now do it without going near a keyboard.

PR4000, as the hard 'n soft package is called, consists of a souped-up PC AT configuration (E86 microprocessor plus a 40 Mb harddisk) driven by a microphone and linked to a printer.

The idea is that a doctor, for example, will be able to dictate the data needed to complete a detailed medical report by having the machine offer a document template into which the information is entered solely by voice signals.

The work of generating, saving, and printing out such documents is therefore radically speeded up.

As you enter material, either from a cabled or remote mike, a status line tells you where you are in the form. You can skip from heading to heading in your document, speak in numerical or verbal information, and then tell it to print out the result.

The rig needs a quarter of an hour to learn to recognize a given speaker's voice. And Provisuel claim 95% accuracy, once the process is completed. A termbase of 4000 typical technical expressions can then be built.

Each machine can hold up to 30 separate databases for separate users, making the outfit profitable for a hospital where different services, from pathology to scanning, can all use the same hardware.

An interesting side-effect of such langtech may be that report forms will gradually become standardized as a result of purely technoid constraints – and Provisuel is already helping the French ministry of health and the medical community to establish universal guidelines on technical "document" structure for the electronic age.

The technology behind PR4000 is based on straight signal processing rather than AI speechware, but Provisuel sales director Jean-Pierre Roger won't say which company bolted the electronics board together.

The product has been marketed only since January as a top-end product aimed at busy keyboard-shy specialists. It is already being used with success in a major Paris hospital and, as LT goes to press, five more rigs have been sold. Although medical applications first inspired Provisuel hackers, robot control, insurance and banking operations offer obvious fields for speech data entry.

PR4000 will cost you around FF150,000 (US$ 25,000) before tax. Cash? Or can I speak you a check?

Provisuel SA, 13 rue Rosenwald, 75015 Paris, France. Tel: +33 (1) 48560179.

MICROCOMPUTER FOR THE BLIND

The Libra DOS microcomputer for the blind has a 40-character tactile braille display instead of a monitor. It allows the blind to work side-by-side with sighted colleagues. By linking a conventional PC to the Libra, the blind wordworker can check his/her sighted colleague's data, and vice versa. Price: US$11,500. From Libra (RW) Ltd., London. Tel: +44 (1) 302 4583.

CASUAL OCR

Inovatic has augmented its line of OCR software with a program geared towards "casual" OCR users.

The Paris-based firm has developed its new ReadStar EX*PRESS package to run on a 640 Kb MS-DOS machine without additional or special hardware.

The software can analyze complex pages of text and images, train itself to read a wide range of fonts, allows users to guide the training process, and maintain tabular formatting.

It operates by first classifying the character patterns found on the page and then recognizing the classified patterns as characters. In "semi-automatic mode," unrecognized patterns are displayed for the user and can be identified at the keyboard.

In addition to the OCR software, the package includes a utility for flagging common OCR errors such as confusing the numeral "1" and the letter "I," and one for correcting errors in context with the aid of a built-in spellchecker.

Price: $995. Current owners of Inovatic's ReadStar II Plus can purchase ReadStar EX*PRESS for $250.

Inovatic, 3 Avenue du Centre, 78180 Montigny-le-Bretonneux, France. Tel.: +33 (1) 30572211

BACK TO THE FUTURE

WE STILL HAVE A LIMITED NUMBER OF BACK ISSUES OF LT AVAILABLE.

PREMIERE ISSUE. Extremely rare. The old ALPS. Radical Velotype keyboard. Haynes technical publishers. The first story to spill the beans about **Eurotra**, the largest machine translation project in the world. Mercury/Termex review.

2. Alan Melby on the translator workstation. Tron. Andrew Seybold. **Tim Leary**. In-depth look at scholar/entrepeneur **Roger Schank**'s Cognitive Systems. BSO's Distributed Language Translator. Review of hypertext program Guide.

3. The philosophy behind video games. **Filofax**. In-depth look at the only profitable machine translation company: **Smart**. Crouzet's voice recognition cockpit. INRAC, the synthetic writer. Behind the scenes at the Independent. Bookshelf. PC-MOS review. **Amnesia**, the first computerized novel.

4. MT pioneer Michael Zarachnak on the Space Age and Machine Translation. **Bill Atkinson** on the HyperCard. Transputers. Lexicographer supreme Laurence Urdang. Einstein, Olivetti's revolutionary natural language computing environment. The **Oxford English Dictionary CD-ROM**. State of the art of DTP. France's Calliope MT project. **Knowledge Pro** and Knowledge Maker. Reviews: Q & A natural language database; **Grammatik** II style checker

5. Interactive screenplays. **Maghi King**. Alex Gross on glossaries. Dubbing and titling in films and television. Philip's elegant **Rosetta** machine translation project. **State of the art of OCR**. Susan Shepard's stunning look at the online phenomenon. Review: the electronic ghostwriter Thoughtline; the style checker RightWriter; Marquandt's ergonomic keyboard. **USA Today**.

6. Computer visionary **Alan Kay** on the psychology behind modern interface design. PCW's **David Bunell** on his HyperCard MacWorld, **Jef Raskin**'s Information Appliance, the Canon Cat, **Controlled English**, Gachot and his unified **Systran** MT System. Review: INK Text Tools, the translation aid; **NotaBene**, the multilingual wordprocessor even WordPerfect is nervous about; the HUM Concordance Text Analysis program; an Electronic Sherlock Holmes Companion; Electric Language, the book about how using electrons to work with words is changing the way we think.

7. First Anniversary issue with now scandalous cover and story on **sex and dating** on the Minitel, how **Longmans** collects world English, document image processing, how to test a machine translator, how to build your own personal workstation, critic of television **Neil Postman**, Andre Abbou and the state of the language industries, Stewart Brand's **The Media Lab**, reviews of freeform databases, Microlytics' WordFinder, McGraw Hill's Science and Technical Reference on CD-ROM, Borland's Sprint, MacLink Plus, Electronic Text's **WordCruncher**, Jurisoft's **CompareRite**.

8. The **Media Lab's Nicholas Negroponte**, Bitstream's type design whiz **Matthew Carter**, HyperCard Handbook's **Danny Goodman**, Will Your Grandchildren Speak Chinese? about Chinese wordprocessing, **Whatever Happended to CD-I**? The Logos machine translation story, wordprocessing technology for the blind, 15 tips for using **Microsoft Word**, and Reviews of WordStar 2000, **PageMaker 3.0**, Procomm Plus, SideKick Plus, Radius greytone display, Total Word, WordPerfect for the Mac, and a preview of **Grammatik III**.

9. First issue after merger with Language Monthly. New LinguaFranca and Mondoglosso sections on multilingual wordworking. News about the grammar checking rivalry getting tense. Features include Vicky Hearne's **rant against Controlled English**, How the Japanese do it (wordprocesssing [**wapuro**] that is), Computer Aided Language Learning, 15 tips for using **Ventura Publisher**. Reviews on multiscript wordprocessors, **IZE**, Megachomp's **Russian wordprocessor**, The Fifth Generation by J. Marshall Unger.

10. Cover story: **The state of the art of speech recognition**. Exclusive report on IBM's natural language research, and **Critique**, its functioning grammar checker. How to build a **translator workstation on the Mac**. Stars: syntactician Laurence Danlos, Meteo's John Chandioux, and **Rolodex**. 15 tips for using **PageMaker**. Reviews: NBI's Legend; Lotus Agenda; **Shoshana Zuboff**'s "In the Age of the Smart Machine: The Future of Work and Power."

11. Cover on hypertext inventor **Ted Nelson**. Features: **BBC's Domesday** interactive video project; **Neural Networks** and language processing; Ericsson's **Interdoc** indexing and storage facility; 15 tips on using **Xywrite**. Stars on speech recognition whiz Joseph Mariani, langtech researchers at **Cap Sogeti**, and Linotype. Reviews: **Micro Oxford Concordance Program**; WordMark; **AskSam**; Symantec's GrandView; Sita Language Learning System.

12. Special documentation issue. The current state of the art of making manuals. Documentation at **BMW**. **Apollo**'s online documentation system. **Documentation in Space** – what they'll use on the space station. Stars: Collin's chief dictionary publisher **Pierre Cousin**, SITE, the UN's chief terminologist Harald Hille. 15 tips for using WordPerfect. Reviews: Ventura 2.0, Illustrator and Freehand, Vuwriter, Xpress, Steve Jobs and John Sculley. Jef Raskin's rant against Hypertext.

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MICHEL GINGUAY

Loneliness of the long-distance dictionary compiler

Text and photo by Andrew Joscelyne

Michel Ginguay, doyen of French-English electronic data processing (EDP) lexicographers, is progenitor of four now standard bilingual reference tomes: the Dictionnaire d'Informatique, Français/Anglais, 1988; Anglais/Français, 1989; plus English/Spanish and English/Italian versions of the same.

Andrew Joscelyne, LT's stoic surveyor of language-industrial frontiers, braved mountains of index cards to learn more about the man and his dictionaries.

"I first got the itch to write dictionaries when I was working as a translator for a shipbuilding company in the late fifties. But it wasn't until after I'd spent a few years translating for IBM France that I got hands-on experience actually compiling a dictionary.

"Then I worked for General Electric and Bull, so I got to handle a variety of terminologies. My personal file of computer terms was bursting at the seams, but there was still no bilingual aid for translators on the market.

"In 1970, Masson, my present publisher, brought out the first edition of my English/French bilingual EDP dictionary – it's now in its ninth edition. At that time, I also helped rewrite Part One of the Harrap's Standard French and English Dictionary. So I suppose I became something of a dictionary maniac.

"Putting a dictionary together on your own is a long and lonesome occupation. You need several years, enough money to support yourself – and plenty of index cards. Not only do you have to keep in permanent touch with current usage by reading, but you then have to be selective in choosing the terms that will best help your readers.

"Since my dictionaries are used mostly by translators, you know that what they want is rapid, accurate help with new words and abbreviations. They don't need irrelevant information on etymology or whether or not the target term is under consideration by some standards committee."

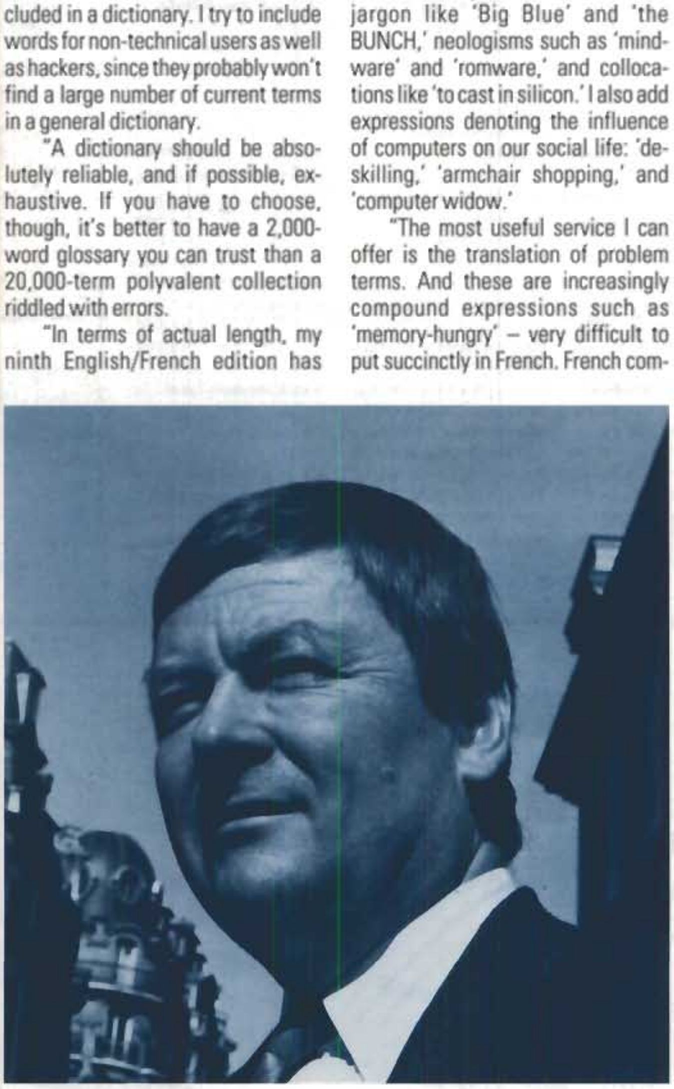
THE UBIQUITOUS ORDINATEUR

"Although EDP is considered a technical field, on a par with, say, the oil industry or engineering, it has obviously entered almost every other area of technology – and life.

"Like cars, computers have become consumer products. And they're now so familiar to the general public that terms wielded by non-technical users also need to be included in a dictionary. I try to include words for non-technical users as well as hackers, since they probably won't find a large number of current terms in a general dictionary.

"A dictionary should be absolutely reliable, and if possible, exhaustive. If you have to choose, though, it's better to have a 2,000-word glossary you can trust than a 20,000-term polyvalent collection riddled with errors.

"In terms of actual length, my ninth English/French edition has some 13,600 entries – excluding lists of abbreviations – offering what I feel is a relatively cheap tool for translators. Many technical dictionaries run to tens of thousands of terms, but are usually unwieldy and expensive.



"I get my data for dictionary building from various sources. The long, hard part is carefully reading computer documentation, technical works, and specialized magazines of all sorts to get the main body of terms currently in use.

"Then I have to look at existing glossaries – standardized lists, source-language technical dictionaries (English in my case), constructor glossaries, and standards commission lists – in order to verify terminology.

THEY ARE ANGLOIDS

"Once I've listed terms from my reading, I have to decide which entries I'm going to put in my dictionary.

"I'll obviously put in clear terms like 'ROM chip,' but I'll also include jargon like 'Big Blue' and 'the BUNCH,' neologisms such as 'mindware' and 'romware,' and collocations like 'to cast in silicon.' I also add expressions denoting the influence of computers on our social life: 'deskilling,' 'armchair shopping,' and 'computer widow.'

"The most useful service I can offer is the translation of problem terms. And these are increasingly compound expressions such as 'memory-hungry' – very difficult to put succinctly in French. French computer experts themselves are usually so stuffed with Angloid jargon that they're rarely useful as terminologists. But their explanations can help me perceive the precise range of definition of a term, so I can more easily find an equivalent. "Selecting translations depends on various factors. A lot of them are just given; they're known in the technical community and pose no problems.

"If it's a rare or recent word, I have to decide whether it's a nonce expression used by a writer or journalist. Hence the need to check various different magazines. Very rare terms are interesting, since dictionaries usually forget to give them. Other terms just have no translation. Take 'streamer' in French. At first, I suggested an explanatory 'dérouleur en continu' to distinguish it from a tape unit ('dérouleur de bande'). My next edition, though, will show a trend towards another translation ('unité de sauvegarde').

"Some people keep fighting of course against calques and borrowings such as 'temps réel' for 'real time.' But however un-French they are, they exist. And I've got other fish to fry than fighting rearguard battles for doomed equivalents.

"In France there are various – in fact too many – bodies concerned with 'standardizing' the language and defending it from anglicisms. Most of them have no financial means to really influence practice, and almost never include a translator among their members. As a result, they rarely have any lasting effect."

YOU CAN'T WIN

"A dictionary maker is caught between two extremes. Either he tries to influence usage by proposing a neologistic translation for a term, without really reflecting actual usage. Or he borrows the term – e.g. 'bit' – and gets badmouthed for 'linguistic treason.'

"Waiting to see what usage produces is obviously the best policy, but I also realize that the very existence of a dictionary represents a sort of de facto standard for lots of users, even if I claim no more than that it merely reflects what people tend to say and write.

"No doubt we'll all be using electronic dictionaries in the future: and for a dictionary maker they will be far easier to correct and update. However, there will be a transition period, paper and electronic versions co-existing.

"In my view, the ideal would be a cheap paper edition of just the relevant terms I need for a given task, extracted from a large scale terminology database. I find that an experienced translator can look up a word in a paper version more quickly than he can type in a term for a search utility to process.

"Unlike current dictionaries, my ideal electronic version would have examples, synonyms and definitions, and be continually updatable. It would probably be hard to get a publisher to see the economics of such a project, though. So I expect to see my future editions still coming out in paper covers for a while yet."

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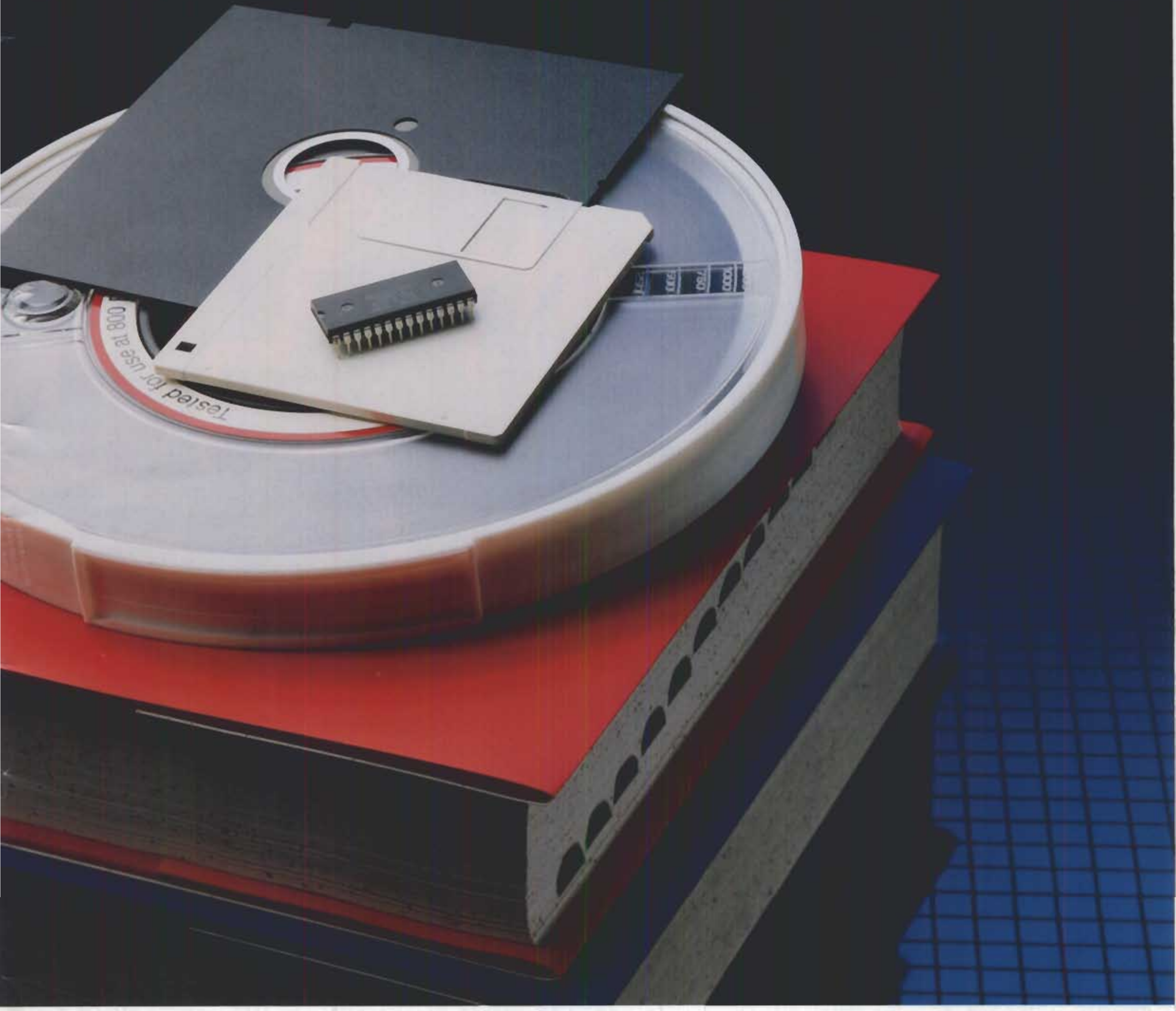

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